BLM LIBRARY
88036694

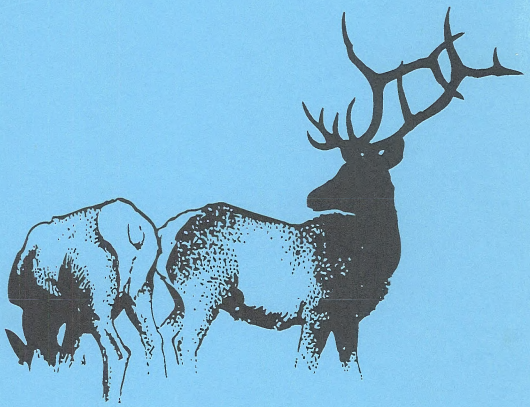
United States Department of Interior
Bureau of Land Management

Elko District
Wells Resource Area, Elko, NV

July 1994

# Wells Resource Management Plan

## DRAFT
## Elk Amendment
## and
## Environmental Assessment



QL
737
.U55
L573
1994

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

## *MISSION STATEMENT*

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, wilderness, air and scenic, scientific and cultural values.

BLM/EL/PL-94/018+1610

D8803694

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
NEVADA STATE OFFICE
850 Harvard Way
P.O. Box 12000
Reno, Nevada 89520

IN REPLY REFER TO:
1610 (WEL-E)
(NV-930.1)

July 22, 1994

Dear Reader:

Enclosed for your review and comment is the Wells Resource Management Plan (RMP) Draft Elk Amendment and Environmental Assessment (EA). This amendment analyzes the impacts of several alternatives for managing elk in the Wells Resource Area, Elko District of the Bureau of Land Management (BLM).

Your comments are needed at this time to ensure that your concerns have been considered in this planning and environmental process. Please direct all written comments to: Bureau of Land Management, Attention: Wells Area Manager, 3900 East Idaho Street, P.O. Box 831, Elko, Nevada 89801.

A public "Open House" meeting to answer questions will be held on August 18, 1994 at the Wells High School Auditorium, 115 Lake Street, Wells, Nevada. This meeting will begin at 7 p.m., local time.

If you have any questions, please contact Bill Baker, Wells Area Manager, at the above address or telephone (702) 753-0200. All comments pertaining to the scope of this amendment will be used to help us prepare the Wells RMP Proposed Elk Amendment and Final EA. This future document will be published and sent to all interested and affected parties.

It is important to note that the 30 day comment period on this Draft document will end on August 31, 1994. All written comments must be postmarked on or before this date to be considered in the proposed plan amendment and final EA.

Sincerely,

Ronald B. Wenker

Ronald B. Wenker
Acting State Director, Nevada

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

# COVER SHEET

## WELLS RESOURCE MANAGEMENT PLAN
## ELK AMENDMENT AND ENVIRONMENTAL ASSESSMENT

(X) Draft Amendment ( ) Supplemental Draft Amendment

| | |
|---|---|
| **Lead Agency:** | U.S. Department of the Interior<br>Bureau of Land Management |
| **Cooperating Agencies:** | None |
| **Project Location:** | Elko County, Nevada |
| **For Further Information Contact:** | Bill Baker, Wells Area Manager<br>Telephone (702) 753-0200 |
| **Direct Correspondence to:** | Bureau of Land Management<br>Attn: Wells Area Manager<br>3900 E. Idaho Street<br>P.O. Box 831<br>Elko, NV 89803 |

**Abstract:** The Wells Resource Management Plan Draft Elk Amendment and Environmental Assessment outlines and analyzes five alternatives for the management of elk on public lands in the Wells Resource Area, Elko District of the Bureau of Land Management.

The preparation of this document was coordinated with numerous individuals, private land owners, and a Task Force Group, which includes representatives from resource management agencies, special interest groups, and Elko County Government.

| | |
|---|---|
| **Date Draft Amendment Issued:** | July 25, 1994 |
| **Date Comments must be Postmarked:** | August 31, 1994 |

**Responsible Official for Amendment:**

Ronald B. Wenker
**Ronald B. Wenker**
**Acting State Director, Nevada**

July 22, 1994
**Date**

# TABLE OF CONTENTS


Page

I. PURPOSE AND NEED

Introduction ..... 1
Location ..... 2
Planning Process ..... 2
Scoping ..... 2
Planning Issues ..... 3
Planning Criteria ..... 3

II. ALTERNATIVES, INCLUDING THE PREFERRED ALATERNATIVE

Alternative 1 - No Action ..... 8
Alternative 2 - Limited Growth (1,000 elk) ..... 9
Alternative 3 - Preferred Alternative (2,200 elk) ..... 14
Alternative 4 - Moderate Density (3,500 elk) ..... 15
Alternative 5 - High Density (4,800 elk) ..... 16
Alternative 6 - Maximum Elk Density (12,868 elk) ..... 16
Alternative 7 - Limited Growth North of I-80 (800 elk) ..... 18

III. AFFECTED ENVIRONMENT

Terrestrial Wildlife Habitat ..... 20
Vegetation ..... 22
Livestock Grazing ..... 22
Wild Horses ..... 23
Water ..... 23
Riparian/Stream Habitat ..... 25
Lands ..... 25
Recreation ..... 25
Visual Resources ..... 25
Economic Conditions ..... 26
Population ..... 26
Income and Employment ..... 26
Public Attitudes ..... 29

IV. ENVIRONMENTAL CONSEQUENCES

Alternative 1 - No Action ..... 30
Alternative 2 - Limited Growth (1,000 elk). ..... 34
Alternative 3 - Preferred Alternative (2,200 elk) ..... 38
Alternative 4 - Moderate Density (3,500 elk) ..... 41
Alternative 5 - High Density (4,800 elk) ..... 44
Cumulative Impacts ..... 47
Monitoring Needs ..... 47

V. CONSULTATION AND COORDINATION

Persons, Groups, and Agencies Consulted ..... 47
List of Preparers ..... 48
List of Reviewers ..... 48

# TABLE OF CONTENTS (Cont.)

Page

## List Of Maps


Map 1 General Location Map ..... 5
Map 2 Existing Management Areas and Presently Occupied Areas ..... 6
Map 3 Task Force Boundary ..... 7
Map 4 Proposed Elk Management Areas ..... 11
Map 5 Wild Horse Herd Management Areas ..... 24


## List Of Tables


Table 1 Reasonable and Existing Numbers ..... 10
Table 2 Elk Management Area Descriptions ..... 10
Table 3 Acres of Moderate-High Potential Elk Habitat ..... 14
Table 4 Private Land Adjustment Criteria ..... 14
Table 5 Existing and Target Elk Population Levels by Alternative ..... 17
Table 6 Summary of Resource Issues ..... 19
Table 7 Elk Densities for Low, Moderate, and High Potential Habitats ..... 20
Table 8 Potential Elk Habitats Within the Wells Resource Area ..... 20
Table 9 Pilot Mountain Key Forage Use Levels ..... 21
Table 10 Range Condition in the Wells Resource Area ..... 22
Table 11 Wild Horse Herd Management Areas Initial Herd Sizes ..... 23
Table 12 Elko County Total Income and Employment-1991 ..... 27


## List Of Appendices


Appendix A Adjudication, Land Use Planning, Monitoring
Appendix B Management Determination and Impact Analysis Summary
Appendix C Estimated Elk Population Growth Model
Appendix D Elk Available Forage Analysis
Appendix E Nevada Division of Wildlife Elk Management Summary

# WELLS RESOURCE MANAGEMENT PLAN

## *DRAFT*

# ELK AMENDMENT
# and
# ENVIRONMENTAL ASSESSMENT

## I. PURPOSE AND NEED

The purpose of this amendment is to establish elk habitat management areas, identify habitat requirements and specific management objectives and practices, establish target elk population management levels, develop factors for attainment and future adjustments in elk population management levels, and identify constraints on other resources within the Wells Resource Area (WRA).

Introduction:

Through a review of elk habitat management in the WRA, it was determined that elk numbers and habitat use areas are expanding from those identified in the Wells Resource Management Plan (RMP) Record of Decision (ROD) signed July 16, 1985. Elk habitat management objectives were identified for the Pilot and Jarbidge Mountain areas in the Wells RMP. At that time, Jarbidge was identified as a future management area. Elk were reestablished in the Jarbidge Mountains in January, 1990. The Jarbidge elk herd has remained within identified management areas on Elko BLM and adjacent Humboldt National Forest administered public lands. However, elk are recognized as highly adaptable creatures and during recent years have "pioneered" adjacent previously unoccupied habitats in the WRA from the Pilot Mountain Management Area, northwestern Utah and southern Idaho.

A policy statement issued by the State of Nevada Board of Wildlife Commissioners on December 6, 1988 identified Pilot Mountain as the only established elk population in the WRA. This policy statement recognized that elk were pioneering into adjacent habitats, however, no evidence existed to indicate these pioneering elk have established permanent populations outside the Pilot Mountain Management Area.

In 1990, the Nevada Division of Wildlife (NDOW) identified established elk populations on Pilot Mountain as well as the Crittenden/Goose Creek, Murdock Mountain, and 10-Mile/Black Mountain areas. The NDOW identified these populations outside Pilot Mountain as being established because they have maintained a breeding nucleus of animals for the past 4-8 years, are commonly sighted throughout the year and do not appear to migrate to Pilot Mountain or to other areas seasonally. Because of social behavior and high adaptability to available habitat types, elk have more recently been pioneering outside these management areas as well as immigrating into the resource area. Elk have been sighted in the Snake Range, East Humboldt Range, South Ruby Range, Spruce Mountain, Pequop Mountains, and Cherry Creek Range.

Because of the growing concern for expanding elk numbers in the resource area and their potential impact to attainment of existing multiple use objectives identified in the Wells RMP/ROD, the decision was made by the Nevada State Director to address this issue through amendment of the RMP.

**Location:**

The WRA is located in the northeast corner of Nevada and encompasses approximately the east half of Elko County (see map 1). It contains 5.7 million acres of which 4.3 million are public lands administered by the Bureau of Land Management (BLM). The two existing elk management areas (Jarbidge and Pilot), presently occupied habitats, and habitat potentials within the WRA are shown on Map 2.

**Planning Process:**

The land use planning process, as mandated by the Federal Land Policy and Management Act (FLPMA) of 1976, is designed to enable BLM to address the issues and concerns of the public in outlining the management of the public lands within logical planning areas. This process involves nine basic planning steps. They are: 1) Identification of Issues; 2) Development of Planning Criteria; 3) Inventory and Data Collection; 4) Analysis of the Management Situation; 5) Formulation of Alternatives; 6) Estimation of Effects of Alternatives; 7) Selection of the Preferred Alternative; 8) Selection of the Proposed Plan; and 9) Monitoring and Evaluation.

This draft amendment and environmental assessment addresses step 1 through 7 of the planning process. After public comments are received on the draft elk amendment and environmental assessment, step 8 will be initiated if a management alternative other than "No Action" is selected as the proposed plan from the management alternatives presented in Chapter II. The Proposed Plan, as well as a "Finding" on the significance of the action will be made available for public review during a 30 day protest period. Upon resolution of any protests a plan amendment will be approved and a decision record will be published and provided to all individuals that participated in the process. Finally, step 9, Monitoring and Evaluation of the plan amendment will be conducted, as are all aspects of resource management plans, to determine if further modifications are needed.

For additional information, refer to the Wells RMP/Environmental Impact Statement (EIS). These documents are available at the BLM Elko District Office.

**Scoping:**

Elk management decisions in the WRA could have impacts on adjacent private and public lands within the tri-state region of Nevada-Utah-Idaho. Conversely, elk management decisions on public lands in adjoining states could have impacts on private and public lands within the WRA. Therefore, a regional approach was felt appropriate in addressing the issue of pioneering elk. A regional approach will also allow for continuity with adjacent public land management agencies in future land use planning efforts. Therefore, a task force consisting of resource management agency personnel, land owners and special interest groups within the tri-state area (Map 3) was formulated to provide for this continuity. The task force was utilized to formulate planning issues, identify the scope of environmental analysis, identify management alternatives to be considered, and provide baseline information.

With input from the task force, a scoping document was prepared which included the management issue, management objectives, preliminary planning criteria, and alternatives.

During this amendment's 45 day scoping period, from May 14 to June 30, 1993, the public was asked by BLM to assist in further defining the planning issue, if necessary. In addition, the public was also asked to help in: 1) further defining the range of alternatives; 2) establishing planning criteria for the development of the amendment; and 3) identifying any other concerns or interests to be considered. Public scoping meetings were held in Twin Falls, Idaho (June 1, 1993) and Wells, Nevada (June 2, 1993).

**Planning Issues:**

Issues drive the resource management planning process and indicate specific concerns which the BLM and the public may have regarding the management of specific resources in a planning area. An issue is defined as an opportunity, conflict, or problem pertaining to the management of public lands and associated resources. Identification of issues orients the planning process so that the efforts of an interdisciplinary analysis and documentation are directed toward resolution of the issues.

Through use of the Task Force and through public scoping, it has been determined that this amendment need only address the issue of elk habitat management. In addressing this issue, the amendment will respond to the following planning questions:

1. Where will elk be managed on public lands in the WRA?

2. What habitat requirements and specific management objectives and practices are needed for elk?

3. What target elk population management level will habitat be managed to support?

4. How will elk population management levels be achieved or maintained?

5. How will adjustments be made in elk population management levels?

6. What constraints, if any, will be placed on other resource uses?

**Planning Criteria:**

Planning criteria are formulated to guide the development of a resource plan or an amendment to the resource plan. Planning criteria are derived from laws, Executive Orders, regulations, planning principles, BLM national and state guidance, consultation with interest groups and the general public, and available resource information of the area. Planning criteria help to: 1) set standards for data collection; 2) establish alternatives to be analyzed; and 3) select the preferred alternative.

The planning criteria for this RMP amendment are:

1. The Planning area is defined as the WRA.

2. The Wells RMP amendment will make elk habitat planning determinations for all public lands located within the planning area boundary.

3. Decisions proposed through this amendment will be in conformance with the decisions in the 1985 Wells RMP Record of Decision.

4. BLM Manual 1622, Supplemental Program Guidance for Renewable Resources, will be utilized to identify the determinations to be made.

5. Existing studies, the most current available inventories, current publications, and professional judgement will be used to determine potential impacts and to make sound management decisions.

6. Decisions about specific elk habitat improvement projects will be made in subsequent activity-level plans or through multiple use decisions designed to implement this amendment. Site-specific impacts of each habitat improvement project will be addressed through National Environmental Policy Act (NEPA) compliance documentation on a case by case basis.

7. Population targets will be set at a level consistent with other existing resource values and uses.

8. Future adjustments in target elk population levels will be made based on monitoring.

9. The time frame for long term management objectives will remain the same as outlined in the Wells RMP; i.e. 20 years from the date of the Record of Decision for the Wells RMP (2005).

10. A Memorandum of Understanding (MOU) between the NDOW and the BLM will be prepared which outlines the management determinations for the selected management alternative.

11. The following definitions will apply:

    Augmentation: The act of releasing native wildlife into habitat presently supporting that species to enlarge an existing population. Sometimes called supplemental transplants.

    Endemic Species: A species that historically has occurred in a specific geographic area.

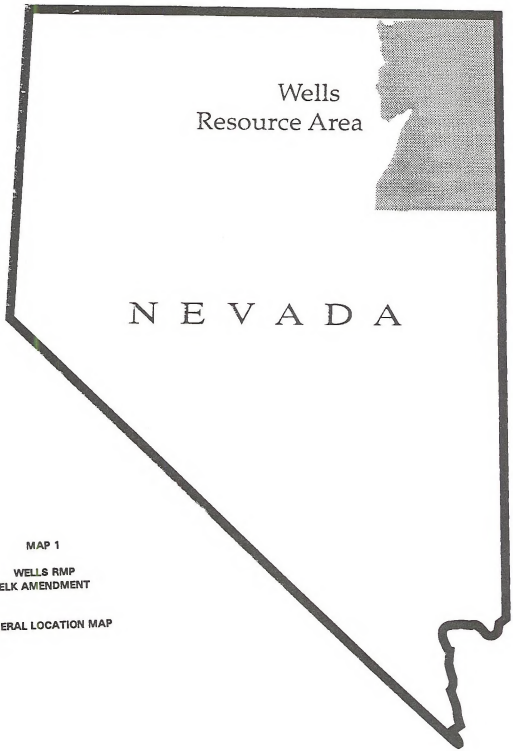
    Established Population: A population of endemic or exotic wildlife species which through pioneering or through introduction or reestablishment efforts has successfully inhabited a specific geographic area creating a viable self-sustaining population.

    Exotic Species: All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem in the United States.

    Immigration: Wildlife species pioneering into the resource area from adjacent states, private, or public lands.

    Introduction: The act of releasing or establishment of an exotic species of wildlife into a natural ecosystem where they have never existed previously.

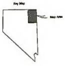
    Native Species: All species of plants and animals naturally occurring, either presently or historically, in any ecosystem of the United States.

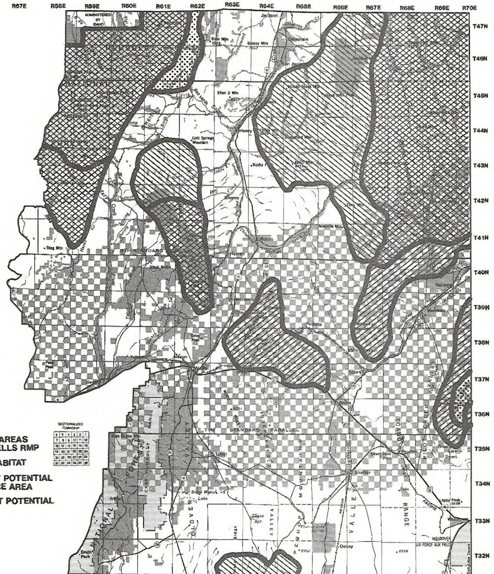



MAP 1

WELLS RMP
ELK AMENDMENT

GENERAL LOCATION MAP



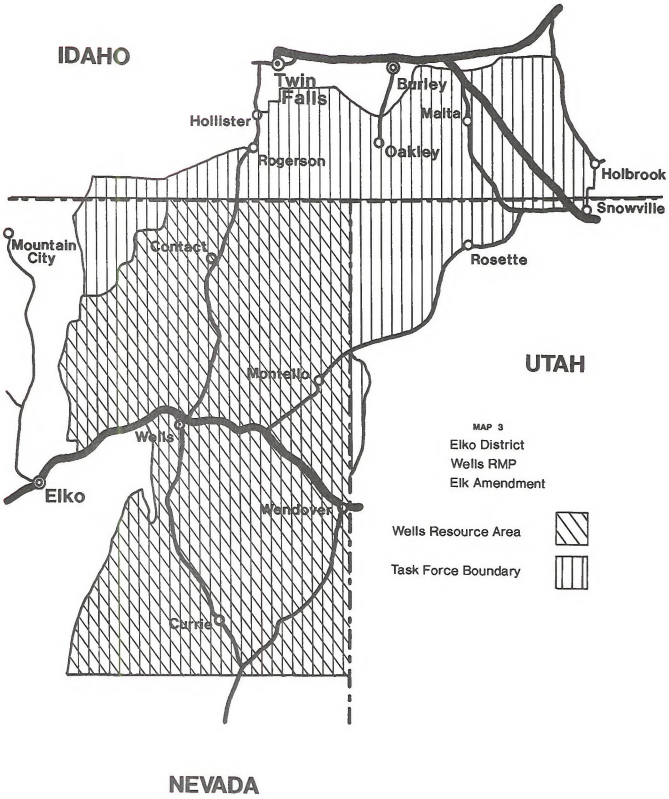

**MAP 2**

**WELLS RMP**
**ELK AMENDMENT**

- BLM LANDS
- OTHER FEDERAL LANDS
- PRIVATE AND STATE LANDS

**ELK HABITAT AREAS**

- EXISTING MANAGEMENT AREAS AS IDENTIFIED IN THE WELLS RMP
- PRESENTLY OCCUPIED HABITAT
- LOW-MODERATE HABITAT POTENTIAL REMAINDER OF RESOURCE AREA
- MODERATE-HIGH HABITAT POTENTIAL




MAP 3
Elko District
Wells RMP
Elk Amendment

Wells Resource Area

Task Force Boundary

Occupied Habitat: Wildlife species observed utilizing available habitat at least on a seasonal basis where particular observed population densities may or may not constitute an established population, i.e. a viable self-sustaining population.

Pioneering: The act of wildlife species colonizing new habitat voluntarily, whether planned or not by the appropriate resource managers.

Reestablishment: The act of releasing native wildlife into habitat formerly occupied by that species for the purpose establishing a self-sustaining population in the wild state.

Release: The act of liberating any wildlife species for the purpose or intent of creating self-sustaining or harvestable populations.

Target Population Level: That population level of elk over six months of age: 1) determined by the land management agency to be consistent with the objective to manage public land forage resources on a sustained yield basis, and 2) from which the land management agency will make recommendations to the NDOW for adjustments either up or down based on monitoring data, and 3) for which the NDOW is committed to manage for through harvest strategies so as not to exceed these levels until rangeland monitoring data and evaluation of multiple use objectives indicates adjustments either up or down are appropriate.

Transplant: The act of releasing native wildlife species into habitat not previously occupied by that species for the purpose or intent of creating self-sustaining populations.

## II. ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

### ALTERNATIVE 1 - NO ACTION:

The management of elk habitat would continue under the existing short and long-term management actions (management determinations) within those management units currently identified in the Approved Wells RMP (see Map 3).

Under the No Action alternative, current elk populations in the WRA would be allowed to expand as a result of naturally occurring populations being established through "pioneering" outside existing management areas on Pilot Mountain and the Jarbidge Mountains and/or through immigration into the resource area. Population expansion would be allowed to the extent that elk are not preventing attainment of existing multiple use objectives identified in the Wells RMP.

***Objectives (As identified in the Approved Wells RMP):***

1. To conserve and/or enhance wildlife habitat to the maximum extent possible while eliminating all of the fencing hazards in crucial big game habitat, most of the fencing hazards in noncrucial big game habitat, and all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other resource uses.

2. Attempt to reach reasonable numbers of elk as determined in conjunction with the NDOW by maintaining and/or improving habitat conditions (Table 1).

3. Attempt to meet 1,952 AUMs demand for elk (Table 1).

4. Management objectives and monitoring efforts will focus on crucial/seasonal/yearlong use areas by their respective seasons of use.

5. Reasonable numbers would be sought through adherence to objectives listed above and reintroductions of elk into suitable habitat. Habitat enhancement to allow for reintroduction of elk in conjunction with NDOW is an objective to be attained through implementation of the [Wells RMP] preferred management alternative.

***Short and Long-Term Management Actions (As identified in the Approved Wells RMP):***

1. Maintain all existing wildlife projects.

2. Continue to monitor the interaction between wildlife habitat condition and other resource uses and consider adjustments in livestock seasons of use to improve or maintain essential and crucial wildlife habitats.

3. Improve habitat in areas identified as potential reintroduction sites for elk as previously identified by the NDOW.

4. Manage 2,600 acres of nonaquatic riparian aspen and 1,000 acres of mountain mahogany habitats.

5. Chain or burn, and seed 5,500 acres to improve crucial big game habitat.

6. Wildlife habitat management plans (HMPs) will follow the development of Allotment Management Plans as closely as possible. HMPs for wildlife will be developed in the following order:

a. O'Neil/Salmon Falls
b. Cherry Creek
c. Spruce/Goshute
d. Mary's River
e. Pilot/Crittenden
f. Goose Creek
g. Ruby/Wood Hills
h. Metropolis

**ALTERNATIVE 2 - LIMITED GROWTH (1,000 ELK):**

This alternative recognizes that elk have pioneered suitable habitats within the WRA outside the Pilot and Jarbidge Mountain Management Areas and in some instances have established self-sustaining populations. Under this alternative, elk management objectives would be identified for six management areas within the WRA (Map 4, Table 2) to support a total resource area target elk population of 1,000 elk (plus or minus 10 percent) (Table 5). The total resource area target elk population level under this alternative would be based on current growth and harvest estimates projecting a total resource area population that would be achieved by 1998.

Table 1. Reasonable and Existing Numbers.[1]

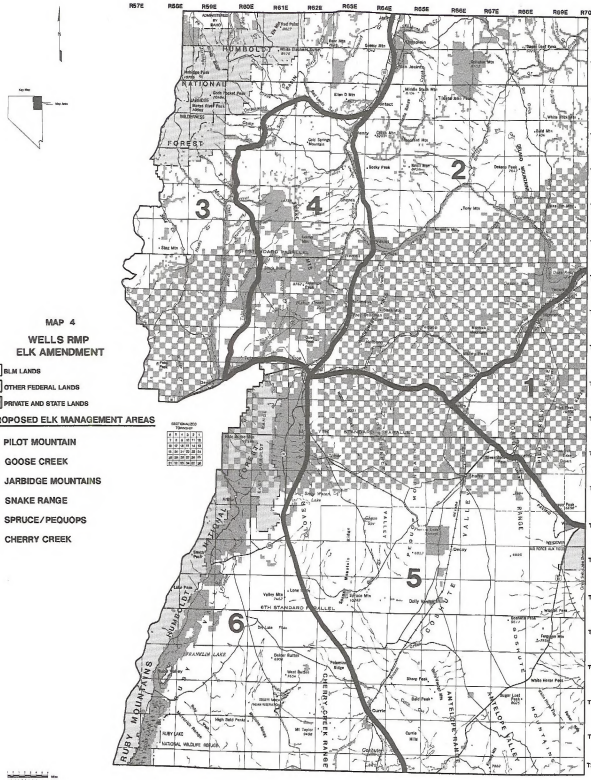
| MANAGEMENT AREA | | SEASON OF USE | REASONABLE NUMBERS | EXISTING NUMBERS[2] | REASONABLE NUMBER AUMS |
|---|---|---|---|---|---|
| Pilot Mountain Mgt. Area | Spruce/Goshute RCA | 1/01-12/31 | 30 | 40 | 288 |
| | | 11/01-3/31 | 60 | 55 | 240 |
| | Pilot/Crittenden RCA | 1/01-12/31 | 30 | 20 | 288 |
| | | 11/01-3/31 | 170 | 50 | 680 |
| Jarbidge Mountain Mgt. Area | ONeil/Salmon Falls RCA | 11/01-3/31 | 10 | 0 | 360 |
| | | 4/01-10/31 | 10 | 0 | 56 |
| | Marys River RCA | 11/01-3/31 | 10 | 0 | 40 |
| Total | | winter use | 330 | 105 | 1,320 |
| Total | | summer use | 10 | 0 | 56 |
| Total | | yearlong use | 60 | 60 | 576 |
| Resource Area Total | | | 400 | 165 | 1952 |

[1] Information in this table has been brought forward from the Proposed Wells RMP and Final Environmental Impact Statement to show seasonal use and reasonable/existing numbers by management area (RCA) (see Table A-2 on pages A-6 to A-9).

[2] This table reflects existing numbers as identified in the Approved Wells RMP. The Jarbidge Mountains were identified as a potential elk reestablishment area in the Wells RMP. Elk were reestablished into the Jarbidge Mountains in 1990.

Table 2. Elk Management Area Descriptions.

| MANAGEMENT AREA | | GEOGRAPHICAL DESCRIPTION |
|---|---|---|
| NORTH I-80 | Pilot Mountain | NDOW Management Area 079 |
| | Goose Creek | NDOW Management Areas 076, 077, and 081 |
| | Jarbidge Mountains | That portion of the WRA west of the South Fork of Salmon Falls Creek and the County Road from Sun Creek Ranch to Deeth |
| | Snake Range | That area bordered by US Highway 93, South Fork Salmon Falls Creek, County Road from Sun Creek Ranch to Deeth, I-80 from Deeth to Wells |
| SOUTH I-80 | Spruce/ Pequops | That area bordered by US Highway 93, I-80 from Wells to Utah, the Utah State Line, the Elko-White Pine County line. |
| | Cherry Creeks | That area bordered US Highway 93, the Elko-White Pine County line, the Humboldt National Forest Boundary, I-80. |




MAP 4

**WELLS RMP**
**ELK AMENDMENT**

- BLM LANDS
- OTHER FEDERAL LANDS
- PRIVATE AND STATE LANDS

**PROPOSED ELK MANAGEMENT AREAS**

1. PILOT MOUNTAIN
2. GOOSE CREEK
3. JARBIDGE MOUNTAINS
4. SNAKE RANGE
5. SPRUCE/PEQUOPS
6. CHERRY CREEK

***Objective:***

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private land resources.

***Management Determinations:***

1. Manage elk habitat in good or better condition within six management areas within the WRA (Map 4, Table 2) to provide forage to sustain a total resource area target elk population level of 900-1,100 (Table 5).

2. Target elk population levels will be achieved as a result of natural expansion of existing populations through pioneering within the resource area, immigration into the resource area, and/or augmentation or reestablishment efforts. Augmentations and/or reestablishments will be subject to the following guidelines:

   a. Augmentations will not be allowed within any management area where existing elk populations are more than 50% of target levels identified in this proposed plan amendment or adjusted through the monitoring, allotment evaluation, and multiple use decision process.

   b. Proposed augmentations and/or reestablishments will be reviewed by the Multiple Resource Advisory Council responsible for advising the Bureau of Land Management on matters relating to public lands and resources under the administrative jurisdiction of the WRA as governed by 43 CFR Part 1784.

   c. Proposed augmentations and/or reestablishments will be authorized by an approved Release Agreement and Operations Plan signed by the BLM District Manager and NDOW Regional Supervisor as per current BLM Manual policy guidance.

   d. All released animals will meet the requirements established by NDOW Wildlife Commission Policy.

   e. All released animals will be ear tagged to facilitate monitoring of seasonal movements.

   f. Augmentations and/or reestablishments will only be allowed within moderate to high potential elk habitat areas identified in this proposed plan amendment.

3. The following habitat development projects would be completed: a) fifteen water developments to supplement existing waters and allow for more beneficial use of available habitat; and 2) modification of 30 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements.

4. Management objectives and monitoring efforts will be placed in the following priorities: 1) crucial; 2) seasonal; and 3) yearlong use areas.

5. Manage elk habitat in the Jarbidge Mountain Management Area consistent with the existing Jarbidge Elk Six Party Agreement.

6. Manage elk habitat in the Pilot Mountain Management Area consistent with the existing Nevada-Utah Interstate Agreement.

7. Adjustments in target elk population levels will be based on monitoring.

8. Seasonal use patterns will be monitored by the NDOW. Augmentation of existing populations with animals wearing radio-telemetry or similar monitoring devices will be allowed to facilitate monitoring efforts.

9. Population levels will be monitored by the NDOW to determine herd composition, trend, and approximate size.

10. The BLM will apply seasonal use pattern information and install vegetation monitoring studies to monitor the impacts of elk use to the vegetation resource. The type and intensity of studies will be determined once populations have become established and use patterns have been determined.

11. Elk population levels will be managed through population management strategies developed and implemented by the NDOW (see Appendix E).

12. Structural and non-structural rangeland improvement projects to improve distribution and forage quality and quantity for both mule deer and livestock will have priority over elk management objectives.

13. Response to depredation complaints concerning elk damage to private land resources will be the responsibility of the NDOW as governed by appropriate Nevada Board of Wildlife Commissioners Policy and/or Nevada Revised Statutes directing such action be taken as deemed necessary, desirable, and practical to prevent land or property from being damaged or destroyed.

14. Supplemental feeding (winter feeding) of elk will not be allowed on public lands.

15. Combined use of key forage species by all grazing animals will not exceed existing allowable use levels as identified in the Nevada Rangeland Monitoring Handbook.

16. Elk use will be included within existing allowable use levels for key browse species by mule deer.

**ALTERNATIVE 3 - PREFERRED ALTERNATIVE (2,200 ELK):**

Under this alternative, elk management objectives would be identified for six management areas within the WRA (Map 4, Table 2) to support a target population level of 2,200 elk (plus or minus 10 percent) (Table 5). This target population level is based on an elk density level of 1.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

Table 3. Acres of moderate-high potential elk habitat.

| Mgt. Area ** | Acres of Available Moderate to High Potential Habitat | % Public Land | Public Acres |
|---|---|---|---|
| Jarbidge | 99,060 | 97 | 95,660 |
| Snake Range | 148,004 | 61 | 90,084 |
| Goose Creek | 767,580 | 80 | 612,285 |
| Spruce-Pequop | 149,584 | 99 | 147,959 |
| Cherry Creeks | 98,950 | 97 | 95,990 |
| Pilot | 66,094 | 49 | 32,654 |
| Total | 1,329,272 | | 1,074,632 |

Table 4. Private Land Adjustment Criteria.

| PERCENT PUBLIC LAND WITHIN MANAGEMENT AREA | ELK DENSITY ADJUSTMENT FACTOR |
|---|---|
| 90-100% | 1.0 |
| 80-90% | 0.75 |
| less than 80% | 0.5 |

***Objective:***

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private land resources.

***Management Determinations:***

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 2) to provide forage to sustain a total resource area target elk population level of 1,980-2420 (Table 5).

2. The following habitat development projects would be completed: a) 20 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 45 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 2,000 acres of vegetation manipulation to enhance elk habitat.

3. Management Determinations 2 and 4 thru 16 listed under Alternative 2 would also apply.

**ALTERNATIVE 4 - MODERATE DENSITY (3,500 ELK):**

Under this alternative, elk management objectives would be identified for six management areas within the resource area (Map 4, Table 2) to support a target population level of 3,500 elk (plus or minus 10 percent) (Table 5). This target population level is based on an elk density level of 2.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

***Objective:***

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private land resources.

***Management Determinations:***

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 2) to provide forage to sustain a total resource area target elk population level of 3,150-3,850 (Table 5).

2. The following habitat development projects would be completed: a) 35 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 55 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 3,500 acres of vegetation manipulation to enhance elk habitat.

3. Management determinations 2 and 4 thru 16 listed under Alternative 2 would also apply.

**ALTERNATIVE 5 - HIGH DENSITY (4,800 ELK):**

Under this alternative, elk management objectives would be identified for six management areas within the resource area (Map 4, Table 2) to support a target population level of 4,800 elk (plus or minus 10 percent) (Table 5). This target population level is based on an elk density level of 3.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

***Objective:***

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private land resources.

***Management Determinations:***

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 2) to provide forage to sustain a total resource area target elk population level of 4,320-5,280 (Table 5).

2. The following habitat development projects would be completed: a) 45 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 55 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 5,000 acres of vegetation manipulation to enhance elk habitat.

3. Management determinations 2 and 4 thru 16 listed under Alternative 2 would also apply.

**ALTERNATIVE 6 - MAXIMUM ELK DENSITY (12,868 ELK):**

Under this alternative, the management of elk is emphasized. Utilizing density criteria applied to all public acres within the resource area, this alternative would maximize elk populations to a level of approximately 12,868. The BLM, with input from the NDOW, determined that the WRA contains approximately 1,041,978 acres of moderate to high potential elk habitat and 3,232,779 acres of low to moderate potential habitat (Table 8). Based on existing information, elk density estimates for similar Great Basin habitat

types were established as follows: 0.5 - 2.5 elk/square mile for low to moderate habitat, and 2.5 - 4.0 elk/square mile for moderate to high habitats. An average density of 3.25 elk/square mile for moderate to high habitat and 1.5 elk/square mile for low to moderate habitat was applied to the available public land acreage within the resource area within each category to determine the maximum elk population within the WRA that could be sustained at the expense of other resource uses. Applying elk density figures to all potentially available habitat within the resource area does not meet the Planning Criteria identified to guide the development of this amendment to the resource plan; i.e. elk populations will be set at a level consistent with other existing resource values and uses. In addition, input received during scoping indicated that managing elk populations at this high level could potentially result in conflicts associated with private land depredation greater than the NDOW would be capable of managing. Therefore, this alternative was considered but eliminated from further discussion.

Table 5. Existing and Target Elk Population Levels by Alternative.

| Management | Existing | MANAGEMENT ALTERNATIVE TARGET POPULATION LEVELS [1] | | | | |
|---|---|---|---|---|---|---|
| | | No Action | Limited Growth | Preferred Alternative | Moderate Density | High Density |
| Jarbidge | 40-60[2] | 110 | 110 | 220 | 370 | 515 |
| Snake Rg. | 0 | 0[5] | 40 | 100 | 170 | 240 |
| Goose Crk. | 150-205 | 0[5] | 400 | 1070 | 1780 | 2485 |
| Spruce-Pequops | 0 | 0[5] | 120 | 340 | 560 | 790 |
| Cherry Creeks | 0 | 0[5] | 80 | 220 | 370 | 520 |
| Pilot | 200-250[3] | 290 | 250[4] | 250 | 250 | 250 |
| TOTAL | 390-575 | 400 | 1000 | 2200 | 3500 | 4800 |

[1]Target population levels are plus or minus 10 percent.
[2]The Jarbidge Mountain herd totals approximately 130-150 of which approximately 40-60 are utilizing habitat in the WRA.
[3]The Pilot Mountain herd totals approximately 350-400, of which approximately 200-250 are utilizing habitat in the WRA.
[4]The target elk population within the Pilot Mountain Management Area remains constant with each management alternative, due to existing management agreements between the NDOW and the Utah Division of Wildlife.
[5]Although a target population level does not exist, elk would be allowed to pioneer suitable habitat outside the Jarbidge and Pilot Mountain Management Areas to the extent use by elk is not preventing attainment of existing multiple use objectives; i.e. there would be no management priority given to elk outside the Jarbidge and Pilot Mountain Management Areas.

**ALTERNATIVE 7 - LIMITED GROWTH NORTH OF I-80 (800 ELK):**

This alternative is similar to Alternative 2 in that it recognizes that elk have pioneered suitable habitats within the WRA outside the Pilot and Jarbidge Mountain Management Areas and in some instances have established self-sustaining populations. However, under this alternative, management objectives would be identified only for those areas currently supporting self-sustaining populations or containing occupied habitat; i.e. four management areas north of I-80 (Map 4, Table 2). However, this alternative does not address the following issues:

1) Moderate to high potential elk habitat exists south of I-80.

2) Establishing elk management objectives within the WRA only for management areas north of I-80 would not recognize the potential for elk to pioneer available habitats south of I-80.

3) Elk are beginning to pioneer suitable habitat south of I-80 from established populations within the resource area and/or immigration from outside the resource area as documented by isolated elk observations.

For the above reasons, this alternative was considered but eliminated from further discussion.

## III. AFFECTED ENVIRONMENT

The WRA is one of two administrative subunits of the Elko District and is located in northeastern Nevada (see Map 1). It basically includes the eastern half of Elko County.

The WRA can be characterized as being arid to semiarid. Low elevation valley areas receive only about eight inches of precipitation with higher elevation mountain areas receiving over twenty inches annually.

The southern two-thirds of the WRA is in the Basin and Range Physiographic Province and the northern portion lies within the Columbia Plateau Province. The Basin and Range Province is characterized by five to fifteen mile wide mountain ranges and valleys. Mountain ranges trend north to north-northeast and are fifty or more miles long. The Columbia Plateau Physiographic Province characteristically consists of rolling plateau lands of low relief broken by occasional buttes and dissected by steep narrow canyons.

This section of the environmental assessment provides additional information to assist the reader in understanding the existing situation and the current problems encountered with managing elk in the WRA. For a more detailed discussion of the environment within the areas of concern, please refer to the Wells RMP and Environmental Impact Statement (EIS) approved July 16, 1985.

The following critical elements of the human environment are not present or are not affected by the alternatives presented in this EA:

Air Quality
Areas of Critical Environmental Concern
Cultural Resources
Farm Lands (prime or unique)
Floodplains
Native American Religious Concerns
Paleontology
Threatened, Endangered, or Candidate Species
Wastes (hazardous or solid)
Water Quality (drinking/ground)
Wild and Scenic Rivers
Wilderness

Table 6 summarizes the resource issues brought forward for analysis in Section V (Environmental Consequences) through scoping and input from Bureau specialists.

Table 6. Summary of Resource Issues.

| Resource Issue | Resource Category |
|---|---|
| Conflicts with existing wildlife uses. | Terrestrial Wildlife Habitat |
| Range conditions and available forage. | Vegetation |
| Conflicts with existing grazing uses. | Livestock Grazing<br>Wild Horses |
| Water availability. | Water |
| Impacts to riparian habitat values. | Riparian/Stream Habitat |
| Constraints on other resource users. | General - All Resource Categories |
| Conflicts with private land resources. | Lands |
| Recreational conflicts. | Recreation |
| Impacts to visual resources. | Visual Resources |
| Socio/Economic impacts. | Economic Conditions<br>Population<br>Income and Employment<br>Public Attitudes |

The following additional information is displayed by resource category to supplement and/or update the description of the existing environment contained in the Wells RMP/EIS.

**TERRESTRIAL WILDLIFE HABITAT**

Big Game Populations and Habitat Conditions

The WRA provides habitat for mule deer, pronghorn antelope, bighorn sheep, and elk. Based on existing habitat monitoring data, mule deer summer ranges are generally in fair to good condition, while winter ranges vary from poor to good condition. Pronghorn antelope summer, winter, and yearlong habitat are rated in poor to good condition. Please refer to Appendix A3-1 on page A3-2 of the Wells RMP/EIS for a listing of existing and reasonable numbers for wildlife and big game habitat conditions.

Elk habitat potentials in the WRA have been classified as either low to moderate or moderate to high. Experience in Utah and Idaho has shown elk habitat densities for Great Basin habitat types similar to those in the WRA range from 0.5 elk/square mile in low potential habitats to 4.0 elk/square mile in high potential habitats (Table 7).

Table 7. Elk densities for low, moderate, and high potential habitats.

| HABITAT POTENTIAL | ELK DENSITY/SQUARE MILE |
|---|---|
| Low | 0.5-1.5 |
| Moderate | 1.5-2.5 |
| High | 2.5-4.0 |

Based on available habitat information and input from the NDOW, elk habitat potentials within the WRA have been classified into two categories; low-moderate and moderate-high (Table 8).

Table 8. Potential Elk Habitats within the Wells Resource Area.

| HABITAT POTENTIAL | PUBLIC ACRES | ELK DENSITY/SQUARE MILE |
|---|---|---|
| Low to Moderate | 3,232,779 | 0.5-2.5 |
| Moderate to High | 1,041,978 | 2.5-4.0 |

The most limiting factor identified on low to moderate habitat potential rangelands was water availability within summer ranges. Winter range was not identified as a limiting factor. Elk are expected to winter on wind swept ridgelines and south facing exposures on public and private rangelands. However, severe winter conditions could force elk into adjacent private agricultural lands.

The locations of current elk use areas and elk habitat potentials are shown on Map 3.

At the time the Wells RMP was approved, there was no official population estimate for elk in the WRA. The best available information at the time simply acknowledged that numbers were increasing and placed herd numbers between 50 and 100. Elk habitat management objectives were established to support a reasonable number of 400 elk within the resource area (Table 1). The elk population in the WRA is currently estimated at 390-575 (Table 5).

The Wells RMP/EIS (Appendix Table A3-2) identified elk habitat in the Pilot Mountain Management Area (Pilot/Crittenden and Spruce/Pequop Resource Conflict Areas (RCA)) as being in good condition. Elk habitat in the Jarbidge Mountains Management Area (Marys River and ONeil/Salmon Falls RCA's) was identified as either in good condition or unknown. The Wells RMP/EIS identified some areas within these management units may be in less than good elk habitat condition due to livestock competition.

Elk are very adaptable and utilize a wide variety of forage types. Although elk are primarily grazing animals, browse constitutes a significant portion of their diet. Since elk are primarily grazers, the potential exists for competition between livestock and wild horses for available forage.

Utilization by elk outside the Pilot Mountain Management Area is very dispersed and is difficult to measure at the current low population levels. To date, monitoring has determined that elk use outside the Pilot and Jarbidge Mountain Management Areas is not preventing attainment of existing multiple use objectives. The results of monitoring conducted within areas currently being utilized by pioneering elk conclude that at current population levels elk have been making use of forage which is largely unavailable to livestock due to terrain and water availability.

Current habitat studies within the Pilot Mountain Management Area indicate current elk populations are not causing adverse impacts or degradation to their own habitat.

Utilization data collected on Pilot Mountain in 1989 and 1993 indicate use of key forage species has been below objective levels for key forage bunchgrasses. Utilization was above objective levels in 1989 and below objective levels in 1993 for key forage browse species (Table 9). High utilization levels of browse in 1989 was recorded on most big game winter ranges in the WRA and was mostly attributed to minimal growth response to drought conditions. This available data seems to indicate that elk movements away from or out of the Pilot Mountain Management Area are the result of social behavior factors rather than forage limitations.

Table 9. Pilot Mountain key forage use levels.

| KEY SPECIES | OBJECTIVE LEVEL | 1989 USE[1] | 1993 USE[1] |
|---|---|---|---|
| Bluebunch wheatgrass | 50% | 26% | 6% |
| Antelope bitterbrush | 45% | 71% | 37% |

[1] Utilization measured at key areas representing big game use only. Utilization figures for bitterbrush represent combined use by elk and mule deer. Utilization figures for bluebunch wheatgrass represents use by elk only.

The NDOW has begun monitoring elk movements in the Goose Creek management unit with the use of radio collars to obtain more information on seasonal elk movements within that portion of the WRA and also to determine what impact elk immigration from outside the resource area is having on population expansion. It will take at least 3-5 years before any conclusions can be made.

## VEGETATION

For a description of the vegetation types which exist in the WRA, please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS.

Based on professional judgement, the Wells RMP/EIS estimated 26 percent of the resource area was in good or excellent ecological condition (the comparison of what the site is producing now to what the site is naturally capable of producing) in 1985. Currently, professional judgement places 37 percent of the resource area in good or excellent ecological condition. An ecological site inventory (ESI) has been completed on approximately 67% (2.9 million acres) of the WRA. Based on an analysis of soils and vegetation data, range condition has been determined for those lands inventoried and classifies 47 percent of the resource area in good or excellent ecological condition (Table 10).

Table 10. Range Condition in the Wells Resource Area.

| YEAR | POOR CONDITION (EARLY SERAL) | FAIR CONDITION (MID SERAL) | GOOD CONDITION (LATE SERAL) | EXCELLENT CONDITION (POTENTIAL NATURAL COMMUNITY) |
|---|---|---|---|---|
| 1985[1] | 20% | 54% | 25% | 1% |
| 1993[2] | 13% | 50% | 32% | 5% |
| 1994[3] | 15% | 38% | 42% | 5% |

[1]1985 Wells RMP/EIS, professional judgement.
[2]1993 WRA Staff, professional judgement.
[3]1994 WRA ESI (2.9 million acres).

## LIVESTOCK GRAZING

The WRA currently has the following adjudicated grazing preference:

| | |
|---|---|
| Active Preference | 375,717 AUMs |
| Suspended Non-Use | 24,184 AUMs |
| Total | 399,901 AUMs |

Adjustments in grazing use needed to achieve multiple use objectives will be based on the monitoring. A description of the BLM's adjudication process and how current land use planning policy/regulations and monitoring relate to existing livestock use can be found in Appendix A.

Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Livestock Grazing. Grazing Allotment Boundaries and allotment categorization are shown on Map 3-3 in the aforementioned document.

**WILD HORSES**

Wild horses in the WRA are currently managed within four Herd Management Area's (HMA) (see Map 5) located south of I-80 in the southern half of the resource area. The initial herd sizes for each HMA established in the Wells RMP Approved Wild Horse Amendment and Decision Record, signed August 2, 1993 are outlined in Table 11.

Table 11. Wild Horse Herd Management Area Initial Herd Sizes.

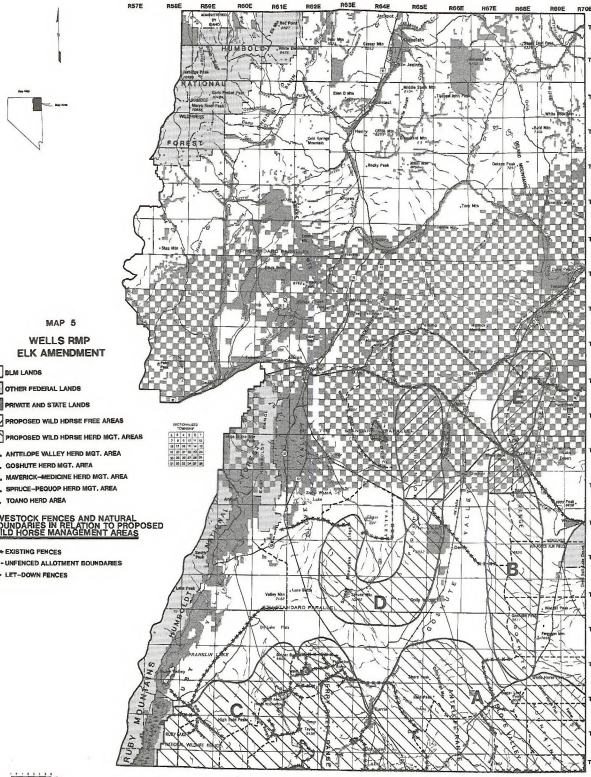
| HERD AREAS | INITIAL HERD SIZE |
|---|---|
| Antelope Valley | 240 |
| Goshute | 160 |
| Maverick-Medicine | 389 |
| Spruce-Pequop | 82 |
| Total | 871 |

The management of wild horses begins at the herd sizes specified above. Future adjustments to the initial herd size will be based on monitoring.

**WATER**

A sufficient amount of perennial water (springs and streams) exists within the resource area to provide an adequate quantity of water for existing uses by big game (including elk), livestock, and wild horses. However, the availability of surface water frequently becomes the limiting factor in determining livestock distribution and the distribution and size of wild horse and wildlife populations. Within some management units, particularly summer range, lack of water on public lands will limit use of available habitat by elk, potentially increasing competition for available water and forage resources. Limitations concerning available waters for wild horses have been addressed in the management determinations for the selected alternative in the 1993 RMP Approved Wild Horse Amendment and Decision Record through development of additional waters for wild horses.

The Wells RMP identified 250 spring enhancement/development projects to be constructed to enhance terrestrial wildlife habitat. At the present time, about twenty-five spring enhancement/development projects and five water facilities (guzzlers) have been completed. Those spring enhancement/development projects identified in the Wells RMP will improve water quality and quantity for big game, livestock, and wild horses.


MAP 5
WELLS RMP
ELK AMENDMENT
BLM LANDS
OTHER FEDERAL LANDS
PRIVATE AND STATE LANDS
PROPOSED WILD HORSE FREE AREAS
PROPOSED WILD HORSE HERD MGT. AREAS
A. ANTELOPE VALLEY HERD MGT. AREA
B. GOSHUTE HERD MGT. AREA
C. MAVERICK–MEDICINE HERD MGT. AREA
D. SPRUCE–PEQUOP HERD MGT. AREA
E. TOANO HERD AREA
LIVESTOCK FENCES AND NATURAL BOUNDARIES IN RELATION TO PROPOSED WILD HORSE MANAGEMENT AREAS
EXISTING FENCES
UNFENCED ALLOTMENT BOUNDARIES
LET–DOWN FENCES
HUMBOLDT
NATIONAL
FOREST
RUBY MOUNTAINS
R57E
R56E
R59E
R60E
R61E
R62E
R63E
R64E
R65E
R66E
R67E
R68E
R69E
R70E
T47N
T46N
T45N
T44N
T43N
T42N
T41N
T40N
T39N
T38N
T37N
T36N
T35N
T34N
T33N
T32N
T31N
T30N
T29N
T28N
T27N
T26N

## RIPARIAN/STREAM HABITAT

Of the 452 miles of stream and 11,413 acres of riparian vegetation inventoried in the WRA, 220 miles and 5,928 acres were on BLM administered lands. Of this total, 161 miles and 4,350 acres were rated in poor to fair condition. Further discussion of riparian/stream habitat conditions in the WRA can be found under this heading in Chapter 3 (Affected Environment) of the Wells RMP/EIS.

Bureau Policy currently places a high priority on the improvement of riparian/stream habitat conditions. All multiple use objectives, including riparian habitat improvement, are monitored and evaluated to determine the need for changes in existing management. Currently in the WRA, changes in grazing management to achieve riparian objectives have included corridor fencing, reduced stocking levels, and/or changes in season of use. At current population levels, elk have not been identified as a contributing factor to the cause of less than good riparian/stream habitat conditions.

## LANDS

The WRA consists of approximately 5.7 million acres. About 4.3 million of these acres are public lands administered by the BLM. The public land pattern is generally consolidated, with the exception of a forty mile wide band of "checkerboarded" land ownership consisting of alternating federal and private sections of land. This pattern was created when the Act of July 1, 1862 granted alternating sections of land to the Union Pacific and Central Pacific Railroads as incentive for construction of the transcontinental railroad.

Federal ownership amounts to about 76% of the land within the WRA boundaries. The remaining 24%, consisting of privately owned land, is concentrated primarily along the forty mile wide "checkerboard" area. Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Lands.

## RECREATION

The public and private lands within the WRA have been recognized by the public for their use in dispersed outdoor recreation. As described in the Wells RMP, recreation use in the WRA continues to be dispersed and includes camping, hunting, fishing, and sightseeing. Recreation within the WRA is considered to have a positive benefit to the local economies with hunting and fishing the predominant forms of recreation. The public demand for elk hunting opportunities far exceeds what current resources can sustain. In 1992, the NDOW reported there were 5,656 applications, statewide, for 115 bull elk tags; or 49 applicants for every available tag.

Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Recreation.

## VISUAL RESOURCES

The WRA contains a variety of scenic qualities which have been classified into resource management classes. In much of the resource area there are north-south oriented mountain ranges separated by large open valleys. In most instances, the mountain ranges possess relatively high scenic values while the valleys tend to be monotypic and possess low scenic

values. Information on management classes and their development can be found in the WRA visual resource management inventory files. Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for more information on Visual Resources.

## ECONOMIC CONDITIONS

The WRA covers the eastern portion of Elko County. However, the Elko County economy, at large, is the principal economic area to be potentially affected by the resource decisions under consideration. And, because of the manner in which data is organized and made available, the affected environment for purposes of economic analysis, must necessarily be defined as Elko County. Wherever possible this analysis will focus on the local economy within the WRA, but analysis of potential effects must also be inferred from county-wide data.

## POPULATION

In spite of phenomenal growth, beginning in 1985, attendant to the expansion of gold mining and gaming related recreation and tourism, Elko County remains predominately rural and sparsely populated. Current official estimates provided by the Nevada State Demographer's Office place Elko County's population at 37,740 for 1992. Population density for the County averages about 2.2 persons per square mile. Approximately 44 percent of the County's population is concentrated in the city of Elko (16,580 persons), with an additional 15 percent in the communities of Carlin (2,270), Wells (1,230), and West Wendover (2,170).

Within the WRA, the population is estimated at 6,360 persons for 1992 (Nevada State Demographer). This includes estimates of 2,440 persons in East Line Township; 1,300 in Jackpot Township; 110 in Jarbidge Township; 380 in Tecoma Township; and 2,130 in Wells Township.

## INCOME AND EMPLOYMENT

Table 12 lists the industrial sector and total income and employment and relative importance of each sector for the study area. Figures for 1991 show Services, Trade, Government, and Mining to be the primary sources of employment.

In 1991, Services provided the major source of income, estimated at 32.3 percent of total industrial income for the county. The Services industry sub-sector, Hotels and Other Lodging Places, produced slightly more than 50 percent ($69.4 million) of the total industrial income ($138.5 million) produced by all service industries. This underscores the strength and importance of gaming and entertainment related - as well as outdoor recreation, hunting and fishing - tourism to the county economy. Income produced by Government, Mining, and Trade followed, in that order of relative importance.

Metal (gold) mining dominates mining activity, producing 96.5 percent ($59.9 million) of the total $62.1 million of mining income. However, the bulk of all mining activity is located in the western part of the county, with only two operations active in the WRA.

County-wide, agriculture produces 3.6 percent of total income and provides 5.6 percent of the jobs. However, agriculture is of relatively higher significance in the more sparsely populated eastern part of the county, where it is traditionally viewed as the economic base. Cash receipts from marketings of livestock and livestock products totaled $49.7 million for the county in 1991, with an additional $1.8 million from crops. This yielded an estimated net farm proprietors' income of $8.7 million, farm labor and other perquisites (room and board,etc.)

income estimated at $4.0 million, and other farm labor (custom, etc.) income estimated at $293 thousand.

Table 12. Elko County Total Income and Employment-1991.

| Income Source | Employment | | Income | |
|---|---|---|---|---|
| | Persons | Percent | $1,000 | Percent |
| Services | 7,424 | 39.2 | 138,546 | 32.3 |
| Government | 2,861 | 15.1 | 73,114 | 17.0 |
| Mining | 1,393 | 7.3 | 62,084 | 14.5 |
| Trade | 3,338 | 17.6 | 61,267 | 14.3 |
| Construction | 1,274 | 6.7 | 40,491 | 9.4 |
| Transportation and Public Utilities | 756 | 4.0 | 26,330 | 6.1 |
| Agriculture | 1,062 | 5.6 | 15,416 | 3.6 |
| Finance, Insurance and Real Estate | 630 | 3.3 | 7,837 | 1.8 |
| Manufacturing | 223 | 1.2 | 4,209 | 1.0 |
| TOTAL | 18,961 | 100.0 | 429,294 | 100.0 |
| Source: | Regional Economic Information System, Bureau of Economic Analysis, 1994. | | | |

The service industry is also of primary economic importance within the WRA. The gaming and entertainment centers of Jackpot and Wendover attract many visitors. In addition to dispersed recreational use of public lands within the WRA, other recreational attractions within the area include the Ruby Lake National Wildlife Refuge and the Humboldt National Forest which include the Jarbidge Wilderness, the Ruby Mountains, and Angel Lake.

Outdoor recreation, particularly elk hunting represents an important economic resource, both to the state and the county with public demand for elk hunting far in excess of what currently available resources can sustain. As previously stated, in 1992, the NDOW reported, statewide, there were 49 applicants for every available elk tag. Because of the limited number of elk available for harvest under current herd management practices, only about 5 percent of the available tags are allocated to non-residents. The current fee for elk tags, in addition to the hunting license fee, is $100.00 for residents and $500.00 for non-residents. A general hunting license for residents is $20.50; non-residents pay $100.50. In addition, there is a $10.00 application fee, $5.00 of which is allocated to a state fund specifically created to provide compensation, as necessary, for elk depredation damages.

Additional revenues are generated for the state by an annual bid-tag for elk, authorized by the Nevada State Legislature, and initiated in 1990. This bid-tag has been offered at auction for the past four elk hunting seasons, and has produced a total revenue of $77,000, or an average of $19,250 per tag (NDOW).

The number of elk tags issued in 1993 totaled 215, statewide. Of those, 30 were for hunting in the WRA. It is estimated that these 30 tags provided 210 hunter days[1], accompanied by 267 non-consumptive wildlife associated recreation days[2], which together generated $21,500 in expenditures[3] and 0.4 full-time equivalent (FTE) jobs (800 hours of labor) in Elko County. Local area income derived from these expenditures is estimated at $6,364[4]. Willingness-to-pay values, which quantify the value of the wildlife-associated recreation, both for the hunter and the non-consumptive wildlife viewer, are estimated at $28,130[5].

Total personal income for Elko County, in 1991, is estimated at $529,436,000. This includes $429,294,000 of industrial earnings (Table 12) plus income from dividends, interest, rent, transfer payments, and other adjustments. Elko County's per capita personal income for 1991 was estimated at $14,887, while the state average was $19,812.

The unemployment rate as of December, 1992, was reported as 5.9 percent; with a total labor force of 16,360, there were 970 persons unemployed at that time. Current figures for

---

[1]Hunter days are estimated at 7 days per hunt. Source: Nevada Department of Wildlife, December 1988; Biological Bulletin No. 9, Nevada Survey of the Economic Value of Trophy Big Game and Deer Harvest.

[2]Non-consumptive wildlife associated recreation days are estimated at 1.27 days per hunter day (Nevada Department of Wildlife estimate used for Wells RMP).

[3]Hunter and non-consumptive expenditures per day are estimated at $74.13 and $22.33 respectively. Source: U.S. Fish and Wildlife Service, November 1982; 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Nevada. Values were adjusted to 1993 dollars with the Gross National Product (GNP) Implicit Price Deflator.

[4]Income and employment estimates are approximations based on adjusted employment coefficients and income multipliers. Source: An Input-Output Model of the Economy of Humboldt and Lander Counties; Fillo, Frank D., Hans D. Radtke, and Eugene P. Lewis, 1978. Nevada Review of Business and Economics; Reno, NV.

[5]Willingness-to-pay values are estimated at $87.92 per hunter day, and $36.23 per non-consumptive wildlife-associated recreation day. Source: Nevada Deptartment of Wildlife, December 1988: Biological Bulletin No. 9, Nevada Survey of the Economic Value of Trophy Big Game and Deer Harvest and U.S. Forest Service, 1990 Resources Planning Act, National Forest Service Benefit Values. Values were adjusted to 1993 dollars with the GNP Implicit Price Deflator.

December, 1993, indicate an unemployment rate of 6.5 percent with 1,170 persons unemployed out of a labor force of 17,250.

**PUBLIC ATTITUDES**

Generally, BLM grazing permittees are of the opinion that the entire public land forage resource has already been adjudicated and there is no forage available for elk. When public land grazing privileges were adjudicated in the 1960's (see Appendix A), the forage demand which could not be supported by the rangeland resource was placed in "suspended non-use". Suspended non-use AUMs (an AUM is an animal unit month which is the amount of forage required to support a cow and calf or five sheep for one month) are not activated or authorized for use until the forage is determined available. Presently there are 24,184 AUMs of suspended non-use within the WRA. Livestock operators feel this suspended non-use coupled with money spent on range improvements and development has helped to achieve the upward trends in range conditions during the past eight years. Therefore, livestock operators feel that a reduction in livestock use to accommodate elk use or the allocation of any available forage to elk rather than livestock would not be acceptable and current livestock suspended non-use AUMs should be activated before elk are given any forage privileges.

In addition, based on opinions expressed during public scoping and Task Force Group meetings, ranching interests are not confident in the NDOW's ability to mitigate impacts to private lands, particularly in the long term when elk populations increase. They are also concerned that once elk become well established, pressure for increased hunting opportunities will override private landowner or land management agency input. As a result, ranching interests and grazing permittees fear that increased elk populations would result in reductions in livestock numbers on public lands and adverse economic impacts to private lands. Grazing permittees also feel that their grazing privileges may be limited in the future as a result of designation of special areas to protect key habitats. Generally, ranching interests view increasing elk populations in the WRA as something that offers the public benefits at the risk of private land resources.

The attitude of most hunters and recreationists is that the forage resource in the WRA can sustain an elk population higher than current levels. The public demand for elk in Nevada is very high. For example, in 1992 there were 5,656 applicants for 115 available resident bull elk rifle tags statewide (49 applicants for each available elk tag). This demand is expected to increase as population of hunters in the state continues to grow. Generally, the attitudes of sportsmen are mixed. Some members of the hunting population feel that perhaps existing livestock numbers should be reduced to a level which would have less impact on big game habitat. However, others wish to see elk use in the WRA maximized without compromising existing livestock and wild horse use levels.

The NDOW believes that the WRA has the potential to support an elk population greater than current levels without impacts to existing uses. The NDOW also acknowledges that elk use of private land resources will increase as populations expand within the resource area. However, they believe that they can resolve those impacts to private landowners through currently available legislation and Nevada Wildlife Commission policy.

## IV. ENVIRONMENTAL CONSEQUENCES

This section outlines the environmental consequences by alternative that would result from implementation of the management determinations listed above. These projections are based on available information and knowledge of the area by personnel in the WRA and the Elko District. Any numbers given are approximate and are used as a basis to quantify impacts. The reader should not infer that they reflect exact or precise totals.

An analysis of impacts for each alternative and the effectiveness of proposed habitat development projects to mitigate the potential impacts of each alternative is shown in Appendix B.

### Alternative 1 - No Action:

#### General

Under this alternative, the environmental consequences identified in the Wells RMP/EIS remain the same. Elk habitat and population management objectives in the WRA would not change. Elk habitat management objectives would continue to exist only for the Pilot Mountain and Jarbidge Mountain Management Areas. The natural expansion of elk populations in the WRA would occur through pioneering and/or immigration into the resource area. Population expansion would be allowed to the extent that elk use is not preventing attainment of existing multiple use objectives identified in the Wells RMP. This threshold would be determined through monitoring.

#### Wildlife

Under the No Action Alternative, impacts to wildlife and existing wildlife habitat would remain the same as identified in the Wells RMP/EIS. The impacts to big game and big game habitats are outlined as follows:

1. The opportunities for reintroduction of native wildlife species would be enhanced or maintained.

2. Terrestrial riparian habitat would generally be improved, maintained in its current condition class, or decline.

3. Big game habitat would generally be improved from good, fair, or poor to the next higher condition class or be maintained in its current condition.

4. Identified wildlife hazards or habitat conflicts would be partially corrected.

#### Range Conditions and Available Forage

Under the No Action Alternative, impacts to range conditions would be the same as identified in the Wells RMP/EIS. Through development of range improvement projects and changes in livestock grazing management, range conditions are expected to improve.

Under the No Action Alternative, elk populations would be allowed to expand naturally through pioneering outside the Pilot and Jarbidge Mountain Management Areas and/or immigration into the resource area to the extent such use is not preventing attainment of existing multiple use objectives identified in the Wells RMP/EIS, including maintaining or improving range conditions. However, no population goals or habitat management objectives for elk would be established for areas other than Pilot and Jarbidge Mountains.

The BLM would continue to monitor and evaluate attainment or non-attainment of identified multiple use objectives in the WRA. If elk use was determined to be preventing attainment of these objectives, a recommendation would be made to the NDOW to reduce or eliminate elk numbers within specific areas.

Rangeland monitoring conducted by the BLM has shown that under the current population levels and distributions, use by elk outside the Pilot and Jarbidge Mountain Management Areas is not preventing attainment of existing multiple use objectives for public lands within the WRA. However, it is difficult to predict how fast and to what level elk populations are expected to expand under this alternative. It is also difficult to predict at what population level elk may begin to prevent attainment of these objectives.

Management of any naturally established population would be the responsibility of the NDOW and the Nevada Wildlife Commission. The NDOW's elk population management goals and objectives would be influenced by the following factors: 1) recommendations from the BLM as a result of monitoring; 2) increased levels of private land depredation complaints; and 3) evaluation of public input by the Nevada Wildlife Commission as part of the normal process of setting seasons and harvests for game species in Nevada. A discussion of the NDOW's elk population management strategies can be found in Appendix E.

#### Existing Grazing Uses

Under the No Action Alternative, impacts to existing grazing uses would remain the same as identified in the Wells RMP/EIS and Wells RMP Approved Wild Horse Amendment; i.e. livestock grazing use could increase from the three to five year average use levels and initial herd sizes for wild horses within the WRA would be 871 horses. Adjustments in livestock grazing use and wild horse initial herd sizes would be based on monitoring.

The BLM would monitor the rangeland resource and make necessary adjustments in existing grazing management and/or uses to achieve multiple use objectives. Where elk management objectives do not exist (all areas except the Jarbidge and Pilot Mountain Management Areas), priority would be given to existing grazing uses identified in the land use plan when adjustments are determined necessary.

Under the No Action Alternative, there would be no management objectives established and no elk habitat improvement projects developed outside the Pilot and Jarbidge Mountain areas. Elk habitat improvement projects could provide for limiting factors and ensure the most efficient use of available forage and habitat by elk not currently available or utilized by existing grazing uses due to terrain and/or water availability. Because no such projects would be developed, mitigation of any potential conflicts between elk and existing grazing uses or attainment of existing multiple use objectives

would be through BLM recommendations to the NDOW to reduce or eliminate elk numbers within specific areas.

Under the No Action Alternative, pioneering elk are not expected to impact existing fences in the short term when populations are small and dispersed. At current population levels, no known impacts from elk to fences located on public lands have occurred. Impacts to fences could begin to occur as elk populations expand. These impacts are expected to be minimal and would occur in isolated areas where seasonal movements and traditional trails are established. Damage to fences would be mitigated on a site specific basis through big game fence modification projects proposed in the Wells RMP/EIS.

#### WATER

Water availability on public land has been determined to be a limiting factor within some potential elk habitats. As elk numbers increase consistent with existing resource values and uses, the demand for available waters could increase. Any increased demand for available waters would not be mitigated under this alternative. Elk habitat improvement projects would not be implemented outside the Pilot and Jarbidge Mountain Management Areas to mitigate increased demands on existing resource values or to allow for more beneficial use of available habitat, including use of forage currently unavailable to livestock and/or wild horses due to terrain and/or water availability. Water developments would be limited to those currently listed as management actions in the Wells RMP for terrestrial big game habitat improvement.

#### RIPARIAN HABITAT

As elk numbers increase consistent with existing resource values and uses, impacts to riparian habitat are expected to be minimal and would remain the same as identified in the Wells RMP/EIS as outlined below:

1. About 95 miles of protected stream (in addition to those miles protected without action) and 2518 acres of streamside riparian habitat would be maintained in good or better condition.

2. Unprotected aquatic and streamside riparian habitat would continue to decline in overall quality.

3. Terrestrial riparian habitat would generally be improved through protection of 250 springs and improved management. About 75% of those habitats in good, fair, or poor condition would improve by one condition class. About 15% of those acres in fair or better condition would remain static and about 10% of those in fair or better would decline by one condition class.

#### OTHER RESOURCE CONSTRAINTS

Under this alternative, impacts to construction or development activities (e.g. mineral, oil and gas, and geothermal exploration or development) would remain the same as outlined in the Wells RMP/EIS. Time-of-day and/or time-of-year restrictions would slow development activities where critical wildlife habitats exist. For more information of the impacts to construction or developments activities, please refer to Chapter 4 (Environmental Consequences) of the Wells RMP/EIS.

Standard operating procedures applicable to management of existing uses would remain the same as outlined in the Wells RMP/EIS Decision Record, i.e. time-of-day and/or time-of-year restrictions would not be placed on construction or development activities to mitigate impacts to elk where elk management objectives do not exist (areas outside Pilot and Jarbidge Mountain).

PRIVATE LAND RESOURCES

Based on experience with existing elk numbers in the WRA, conflicts with private lands are expected to be low during the short term because elk populations are small and widely dispersed. As elk populations continue to expand, increased depredation of private land resources could occur. However, it is difficult to predict accurately to what extent private land resources may be impacted. Compensation for damage to private land resources would be the responsibility of the NDOW. The NDOW would respond to complaints as authorized by state law or Nevada Wildlife Commission policy and/or regulation. A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

It is expected that elk would follow the snow melt in the spring and use forage on public and private rangelands at higher elevations. South and west facing slopes would normally be free of snow and available to elk during this time. However, as elk populations increase, spring elk use of irrigated meadows adjacent to wintering areas could occur. If depredation occurs during spring, impacts to alfalfa fields would be of most concern, primarily as a result of physical damage to soils and/or vegetation from trampling. Grass hay meadows are less susceptible to elk use because fields green-up later in the year and are less vulnerable to trampling.

Depredation of irrigated meadows during springtime is sometimes difficult to resolve. Hazing would have limited success in resolving spring depredation where suitable habitat with cover is adjacent to fields. Emergency hunts designed to remove depredating animals would resolve most problems, particularly where only a few elk are involved.

During severe snow conditions elk may move off public and private rangelands and onto private agricultural lands. If this occurs, depredation of stored hay is possible. Under existing legislation, the NDOW is able to provide wooden panels and wire exclosures which would effectively mitigate depredation in areas where ranchers regularly maintain panels. However, where stored hay is inaccessible and panels are not maintained, consumption and wasting by elk could occur. Technical assistance provided by NDOW could reduce some of the impacts where stored hay could be moved to less vulnerable locations away from expected elk use. In some cases, moving stored hay may not be possible or may result in increased operating costs to the private landowner. Technical assistance in the use of panels and wire exclosures may reduce impacts. Although panels and materials for wire exclosures could be provided by the NDOW, ranchers would still be required to erect panels or construct exclosures around stored hay. This would result in increased operating costs.

Appendices C and D describe the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775. At a population level of 775, the NDOW would issue 30 elk tags annually. As the number of elk tags applications increases, so does

the available funding to address depredation complaints (assuming a certain amount of elk tag application fees continues to go toward funding depredation complaints).

#### RECREATION

Under the No Action Alternative, impacts to recreation would remain the same as identified in the Wells RMP/EIS. Generally, available recreation opportunities would be enhanced through improvement of stream/riparian corridors, big game, and upland game habitats. Improvement of these wildlife habitats is expected to improve both consumptive and non-consumptive recreational opportunities in the WRA.

#### VISUAL RESOURCES

Under the No Action Alternative, impacts to visual resources would remain the same as identified in the Wells RMP/EIS. The impacts of authorized resource activities within the WRA to visual resources would be addressed on a case by case basis to ensure compliance with BLM regulation and policy.

#### SOCIO/ECONOMICS

No definitive economic impacts, either beneficial or adverse, may be inferred to result from implementation of the No Action Alternative since elk numbers would exist only in harmony with existing multiple use objectives. Elk hunting expenditures, and the non-consumptive wildlife-associated recreation expenditures attendant to them, would most likely continue to be of minor importance in the local economy. They should remain at about the level discussed in Section IV, Affected Environment, fluctuating in a manner consistent with the number of elk hunting tags issued.

Under the No Action Alternative, any occasional conflicts between elk and livestock grazing should be minor and of no particular economic consequence. The BLM's monitoring and the NDOW's herd management practices should serve to identify and alleviate any potential problems.

### Alternative 2 - Limited Growth (1,000 elk):

#### GENERAL

Under this alternative, elk habitat management objectives would be established for six management areas within the WRA to support a target population level of 1,000 elk (plus or minus 10 percent); 800 north of I-80 and 200 south of I-80 (Table 5).

Appendix C (Figure C-1 and Table C-1) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a population of 1,000 elk north of I-80 (800 within the WRA plus 200 within the Utah portion of Pilot Mountain) would be achieved in approximately 2-3 years.

It is difficult to predict at what rate elk populations would increase south of I-80. It is expected that elk would pioneer available habitats south of I-80 as populations expand elsewhere in the resource area. Small periodic increases in elk populations would also occur as a result of approved augmentation and/or reestablishment efforts as outlined

in the management determinations for this alternative. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. The target population of 200 elk within the WRA south of I-80 would be achieved within the first 2-3 years following establishment of a base population of 150 animals.

To maintain a target population level of 1,000 elk (plus or minus 10 percent) within the WRA under this alternative, it is estimated that the annual harvest would increase from approximately 30 (20 bull tags, 10 cow tags) to approximately 40 (20 bull tags, 20 cow tags).

#### Wildlife

Elk may directly compete with other native wildlife species, particularly mule deer and bighorn sheep, for available habitat. Like bighorn sheep, elk are primarily grazers. However, elk forage preferences change seasonally and may compete directly with mule deer for browse species. Although the potential exists for competition between elk and bighorn sheep, it is unlikely since elk numbers would be more dispersed and bighorn sheep populations are smaller and more localized, utilizing habitat associated with steep rocky sideslopes. Although it is difficult to predict what elk seasonal use patterns might be and where habitat conflicts may occur, the potential exists for direct competition between elk and mule deer for browse species on existing mule deer winter ranges. At the population levels identified under this alternative, competition between mule deer and elk is expected to be minimal. As per the management determination for this alternative, management priorities would be given to mule deer if monitoring data indicate elk use is causing habitat degradation to mule deer habitat. The BLM would mitigate conflicts by making recommendations to the NDOW to reduce elk numbers as supported by monitoring.

#### Range Conditions and Available Forage

Under this alternative, elk use is not expected to affect existing range or habitat conditions or prevent attainment of management objectives. Monitoring would determine any necessary adjustments in target elk population levels.

#### Existing Grazing Uses

The Wells RMP did not allocate forage for existing grazing uses, but rather identified monitoring would be used to adjust grazing uses (livestock, wild horses, and wildlife) if it was determined that the existing authorizations were not meeting the land use plan objectives. Current monitoring data indicate elk are not preventing attainment of existing multiple use objectives at present population levels; e.g. conflicts with existing grazing uses are minimal. Monitoring and allotment evaluations completed to date have determined that current elk population levels are resulting in minimal conflicts with existing livestock uses on public lands. Although some overlap of use areas exists, the majority of use by elk is currently being made within areas not grazed by livestock due to suitability criteria such as steep terrain and lack of water. Elk appear to select these areas for their forage and cover values. As elk numbers increase, the area of overlapping use and potential conflicts is expected to increase.

An analysis of available data indicates the WRA could support an elk population of between 1,125-2,789 without conflicting with existing grazing uses (Appendix D).

Based on this analysis, elk populations under this alternative would be below the range of numbers determined supportable by forage currently unavailable to livestock and wild horses. As elk numbers increase, the potential exists for competition with existing grazing uses for available forage. However, under this alternative, competition is expected to be minimal.

Elk use patterns and levels of use are expected to continue to be dispersed without competition for available livestock forage. At this population level, it is expected that elk would continue to make use of forage unavailable to livestock due to suitability factors such as terrain and/or water availability. Elk habitat improvement projects identified in the management determinations for this alternative such as water developments (i.e. guzzlers) to supplement existing waters would be effective in providing for elk to make more use of available habitat not currently grazed by livestock, thus minimizing conflicts. Elk habitat enhancement projects would be developed to increase elk use within rangelands unavailable for use by livestock due to terrain and/or water availability.

As elk populations increase, the potential for fence damage would also increase. Management determinations identified under this alternative would mitigate fence damage through fence modifications and/or construction of low maintenance elk pass structures. Under this alternative, impacts to fences are expected to be minimal. It is anticipated that approximately 30 miles of fence modification would be necessary.

#### Water

As elk numbers increase, the demand for available waters is expected to increase. However, conflicts are expected to be minimal. Increased demand for available waters would be mitigated through development of supplemental water facilities for elk within elk habitat management areas away from existing grazing use areas.

#### Riparian Habitat

As elk numbers increase, the potential exists for increased impacts to terrestrial riparian habitats, particularly springs and/or seeps and associated wet meadow areas which could be utilized by elk for wallows. Impacts could also occur to spring developments and associated protection fences as a result of concentrated use. Use of terrestrial riparian habitats by elk would vary depending on season of use and elk population densities. However, it is expected that elk impacts to terrestrial riparian habitats would be minimal. Proposed fence modifications within areas of high seasonal use would be effective in mitigating any conflicts with existing spring exclosure fences.

Adjustments in existing livestock grazing management within the resource area have been made in order to attain management objectives for the improvement of stream riparian habitat conditions. Increased use of stream riparian habitats by elk could slow attainment of these management objectives. However, experience in similar habitat types within the Great Basin has shown impacts to stream riparian habitats by elk populations managed through harvest strategies to be minimal or non-existent. Under this alternative, it is expected that impacts to stream riparian management would be minimal due to the nomadic nature of elk and the unlikelihood of elk making concentrated use in these habitat types. Monitoring would identify conflicts and needed adjustments in elk management to ensure attainment of stream riparian management objectives.

#### Other Resource Constraints

The impacts of other resource management activities on elk habitat would be analyzed for those areas where elk management objectives are established. For example, an impact assessment for construction or development activities could result in time-of-day and/or time-of-year restrictions to mitigate impacts to critical elk habitat.

#### Private Land Resources

The impacts of elk use to adjacent private land resources would be much the same as discussed under the Alternative 1. As elk numbers increase, depredation of private land resources is expected to increase. Compensation for damage to private land resources would be the responsibility of the NDOW as discussed under Alternative 1. Based on existing legislative funding authorities, increased demand for elk hunting opportunities would increase available funding for addressing depredation complaints.

#### Recreation

Increased recreational use within the resource area associated with increased elk population levels would increase on and/or off-road vehicle traffic, causing minor increases in fugitive dust levels and potential increases in road maintenance needs. Increased off-road traffic would cause degradation of watershed values, increasing erosion potentials. Increased recreational use within the resource area could also increase chances for gates to be left open and vandalism to range improvements. All of these impacts are expected to be minimal.

#### Visual Resources

Low level impacts to visual resources would be associated with construction of 15 supplemental water developments within elk habitats. Visual impacts would be addressed on a case by case basis under a site specific environmental analysis.

#### Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. Under this alternative, proposed elk population levels are expected to be achieved within the first two years, at which time the hunting tags for elk would be increased to approximately 40, and continue at about that level on an annual basis, with adjustments as necessary, to maintain target population levels.

These 40 tags would provide an estimated 280 hunter days, and 356 non-consumptive wildlife-associated recreation days, annually. Total expenditures are estimated at $28,750 (1993 dollars), producing about $8,510 in local area income, and about 0.5 full time equivalent (FTE) jobs (1000 hours). Willingness-to-pay values, the value, or worth, of the experience to the hunter and the recreationist, are estimated at $34,800.

The State's annual revenue from application fees, assuming 5 percent of the tags issued would be made available to non-residents, should rise to about $6,180 (assuming 2 of the 40 tags issued being available to non-residents).

Under this alternative any occasional conflicts of elk with livestock grazing are expected to be minor and of no particular economic consequence; i.e. no adverse economic effects can be anticipated. Compensation for any depredation that might occur on private property is available to ranch operators, as discussed under Alternative 1.

**Alternative 3 - Preferred Alternative (2,200 elk):**

GENERAL

Under this alternative, elk management objectives would be established for six management areas within the WRA, to support a target population level of 2,200 elk (plus or minus 10 percent). This total resource area target population level would include 1,640 (plus or minus 10 percent) north of I-80 and 560 (plus or minus 10 percent) south of I-80.

Appendix C (Figure C-1 and Table C-1) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 1,640 elk (plus or minus 10 percent) would be achieved within about 6-7 years. Target levels could be achieved sooner depending upon whether or not augmentation and/or reestablishment efforts occur.

To maintain the target population level under this alternative north of I-80, the harvest strategy would have to shift from limited harvest to maintenance harvest. Beginning 3-4 years prior to achievement of target levels, the number of animals harvested would be increased from approximately 50 (35 bull tags, 15 cow tags) to approximately 65 (35 bull tags, 30 cow tags).

It is difficult to predict at what rate elk would pioneer available habitats south of I-80. Elk are expected to pioneer available habitats south of I-80 as elk populations expand elsewhere in the resource area. Periodic increases in elk populations would also occur as a result of approved augmentation and/or reestablishment efforts within the criteria outlined in the management determinations for this alternative. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 560 elk (plus or minus 10 percent) would be achieved within about 11-12 years.

To maintain the target population level under this alternative south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 25 (15 bull tags, 10 cow tags) to approximately 35 (15 bull tags, 20 cow tags).

WILDLIFE

The potential for competition between elk and other native wildlife species would exist as elk populations increase within the resource area. Competition between elk and bighorn sheep is expected to be minimal due to differences in habitat preferences and low population densities. It is difficult to predict just what seasonal use areas might be. However, under this alternative, use of crucial deer winter ranges by elk and the

potential for direct competition for available browse forage would be greater than under Alternative 2 but a low level of impacts is expected. Conflicts in seasonal use areas would be identified through monitoring with priority for management given to mule deer.

### Range Conditions and Available Forage

As elk numbers increase and elk begin to make use of available habitat, some reduction in range condition could occur. However, under this alternative, elk numbers would remain relatively dispersed and low level impacts are expected. The potential for degradation of range conditions would be greatest in areas of concentrated elk use such as within winter/spring use areas along ridgelines and in areas where snow conditions restrict distribution. Monitoring within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

### Existing Grazing Uses

Elk populations under this alternative would continue to be supported by forage currently unavailable to existing grazing uses (livestock and wild horses) and impacts to existing grazing uses would be low (Appendix D). The degree of conflict between existing grazing uses would be identified through monitoring. Elk habitat enhancement projects would be effective in achieving maximum use of available habitat by elk, minimizing the potential for direct competition with existing grazing uses.

The potential for fence damage could increase as elk populations increase and seasonal migration patterns become established. Mitigation for fence damage would be mostly reactive as elk seasonal use areas become established. Fence damage is expected to be greatest in areas where fences would cross established travel routes. Management determinations identified under this alternative would mitigate fence damage through fence modifications and/or construction of low maintenance elk pass structures. An estimated 45 miles of fence modification would be required under this alternative.

### Water

As elk numbers increase under this alternative, the demand for available waters is expected to increase. However, a low level of conflict is expected as discussed under Alternative 2. Any increased demand for available waters associated with increased elk use would be mitigated as discussed under Alternative 2.

### Riparian Habitat

Impacts to terrestrial riparian habitats (i.e. developed and undeveloped springs, seeps, and wet meadows) would be much the same as described under Alternative 2. Impacts would vary depending on season of use and elk population densities. Monitoring would identify conflicts and recommendations for changes in elk management.

As elk numbers increase under this alternative, impacts to stream riparian habitat by elk and/or the effects of elk use on attainment of stream riparian management objects are expected to remain minimal as discussed under Alternative 2. Monitoring would

quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

### Other Resource Constraints

Management constraints on other resource management activities would be the same as described under Alternative 2.

### Private Land Resources

It is impossible to predict accurately whether depredation of private land resources would occur and to what extent. As elk numbers increase, the potential for depredation of private land resources would also increase. Therefore, the potential for conflict is expected to be greater than for Alternative 2. Conflicts with adjacent private land resources would be mitigated as discussed under Alternative 1.

### Recreation

The impacts associated with increased recreational use would be the same as discussed under Alternative 2. The potential for impacts associated with recreational use is expected to increase as consumptive and non-consumptive opportunities increase. However, impact levels are anticipated to be low.

### Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level impacts to visual resources could occur as a result of construction of 20 water developments and 2,000 acres of vegetation manipulation projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

### Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. The number of elk hunting tags issued under this alternative would increase slowly as the numbers of elk increase. Under this alternative, target population levels would be achieved in about 6-7 years north of I-80 and 11-12 years south of I-80. To maintain these target population levels, the number of tags issued would rise to a level of approximately 100 tags in about 8 years. Hunter days are expected to increase to about 700 days, at this time, with about 889 days of non-consumptive wildlife-associated recreation.

Total annual expenditures resulting from this level of elk hunting and recreation are estimated at about $71,742. This should create an estimated 1.2 FTE jobs (2,400 hours), and provide about $21,300 in local area income. Value derived by the hunters and recreationists is estimated at a total of $93,800 and revenues to the State from application fees should reach about $16,450. While still of no real consequence in terms of the regional economy, the effect is perceptible and positive.

It is recognized that a potential for depredation damage exists, due to the possibility of elk foraging on private land resources. Private losses might be in the form of

damaged fences, loss of some grass or alfalfa hay, incidental loss of aftermath and rangeland grazing, or damage to water or irrigation facilities. Such losses as may occur are expected to be inconsequential due to the relatively small size of foraging elk herds. In most cases, these losses are fully compensable through existing legislation which enables the NDOW to respond to and/or compensate for depredation damage by elk. A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

**Alternative 4 - Moderate Density (3,500 elk):**

GENERAL

Under this alternative, elk management objectives would be established for six management areas within the WRA, to support a target population level of 3,500 elk (plus or minus 10 percent). This total resource area target population level would include 2,570 (plus or minus 10 percent) north of I-80 and 930 (plus or minus 10 percent) south of I-80.

Current populations north of I-80 are estimated between 390-575 (Table 5). Because augmentation and/or reestablishment efforts could be allowed, it is difficult to predict how fast target levels would be achieved. Appendix C (Figure C-1 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 2,570 elk (plus or minus 10 percent) would be achieved within about 9-10 years.

To maintain the target population level under this alternative north of I-80, a maintenance harvest strategy would have to begin 3-4 years prior to achievement of target levels. The number of animals harvested would be increased from approximately 65 (50 bull tags, 15 cow tags) to approximately 80 (50 bull tags, 30 cow tags).

As elk populations increase elsewhere in the resource area, elk are expected to expand into available habitats south of I-80. Small periodic increases in elk populations would occur as a result of approved augmentation and/or reestablishment efforts as outlined in the management determinations for this alternative. Therefore, it is difficult to predict at what rate elk populations south of I-80 would increase. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 930 elk (plus or minus 10 percent) would be achieved within about 16-17 years.

To maintain the target population level under this alternative south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 25 (15 bull tags, 10 cow tags) to approximately 35 (15 bull tags, 20 cow tags).

WILDLIFE

As elk numbers increase under this alternative, the potential for competition between elk and other native wildlife species for available habitat is also expected to increase. Minimal competition between elk and bighorn sheep is expected due to differences in

habitat preferences and low population densities as discussed under Alternative 3. Under this alternative, use of crucial deer winter ranges by elk and the potential for direct competition for available browse forage would be greater than for Alternative 3. Conflicts would be identified through monitoring with priority for management given to mule deer.

#### Range Conditions and Available Forage

Under this alternative, elk are expected to make increased use of available habitat as elk densities become less dispersed. However, impacts to range conditions are expected to remain low. The potential for degradation of range conditions would be greatest in areas of concentrated elk use as described under Alternative 3. Monitoring of rangeland conditions within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

#### Existing Grazing Uses

Elk populations under this alternative would be slightly above that range identified as supportable by forage currently unavailable to existing grazing uses (livestock and wild horses). The elk population range supportable by forage currently unavailable to existing grazing uses is presented in Appendix D. Under this alternative, the level of competition for available forage between elk and existing grazing uses is expected to be somewhat higher than for Alternative 3. The degree of conflict between existing grazing uses would be identified through monitoring. Elk habitat enhancement projects would help maximize use of available habitat while minimizing the potential for direct competition with existing grazing uses. However, under this alternative, it is expected that elk habitat improvement projects would begin to lose effectiveness in mitigating conflicts with existing grazing uses.

The potential for increased fence damage associated with increased elk populations and would be the same as discussed under Alternative 3. Approximately 55 miles of fence modification would be required to mitigate conflicts under this alternative.

#### Water

Under this alternative, the demand for available waters and the level of conflict would be greater than Alternative 3. Increased demand for available waters associated with increased elk use would be mitigated as discussed under Alternative 2. However, as elk populations begin to make increased use of available habitats, the effectiveness of supplemental water developments for elk to mitigate increased demand of available waters is expected to decline.

#### Riparian Habitat

Impacts to terrestrial riparian habitats (i.e. developed and undeveloped springs, seeps, and wet meadows) would be much the same as described under Alternative 2.

As elk numbers increase under this alternative, impacts to stream riparian habitat by elk and/or the effects of elk use on attainment of stream riparian management objects are expected to remain minimal as discussed under Alternative 2.

### Other Resource Constraints

Management constraints on other resource management activities would be the same as described under Alternative 2.

### Private Land Resources

It is impossible to predict accurately whether depredation of private land resources would occur and to what extent. However, as elk numbers increase, the potential for depredation of private land resources is expected to increase. The potential for conflicts with adjacent private land resources would be the same or slightly greater than for Alternative 3. Conflicts would be mitigated as discussed under Alternative 1.

### Recreation

The impacts associated with increased recreational use would be the same as discussed in Alternative 2. The potential for impacts associated with recreational use would increase as consumptive and non-consumptive opportunities increased. The level of impacts would be the same as for Alternative 3.

### Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level impacts to visual resources could occur resulting from construction of 35 water developments within elk habitats and 3,500 acres of vegetation manipulation projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

### Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. This alternative would yield a sustained annual level of approximately 115 tags in 13 years, subject to adjustments for herd size management. Hunter days associated with this number of tags are estimated at 805, and non-consumptive wildlife-associated recreation days are estimated at 1,022.

This level of hunting and recreation activity would produce annual expenditures estimated at $82,500, resulting in 1.4 FTE jobs (2,800 hours), and an estimated direct income in the local area of $24,450. Willingness-to-pay values are estimated at $107,800; and revenues to the state from application fees are expected to be $17,900.

Depredation of private land resources by elk is expected to occur as elk populations increase. Existing state legislation allows for such losses to be fully compensable enabling the NDOW to respond to and/or compensate for depredation damage by elk. A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

It is also anticipated that some competition with livestock grazing on public lands could result under this alternative as elk populations begin to make increased use of available habitat. Monitoring and the application of mitigation efforts would intensify, but at this

elk population level proposed mitigation is expected to lose effectiveness. The potential economic effect on ranch operations cannot be estimated, because potential conflicts with livestock grazing is indeterminate.

**Alternative 5 - High Density (4,800 elk):**

GENERAL

Under this alternative, elk management objectives would be established for six management areas within the WRA, to support a target population level of 4,800 elk (plus or minus 10 percent). This total resource area target population level would include 3,490 (plus or minus 10 percent) north of I-80 and 1,310 (plus or minus 10 percent) south of I-80.

Current populations north of I-80 are estimated between 390-575 (Table 5). Because augmentation and/or reestablishment efforts could be allowed, it is difficult to predict how fast target levels would be achieved. Appendix C (Figure C-1 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 3,490 elk (plus or minus 10 percent) would be achieved within about 13-14 years.

To maintain the target population level under this alternative north of I-80, a maintenance harvest strategy would have to begin 3-4 years prior to achievement of target levels. The number of animals harvested would be increased from approximately 90 (70 bull tags, 20 cow tags) to approximately 110 (70 bull tags, 40 cow tags).

As elk populations increase elsewhere in the resource area, elk are expected to expand into available habitats south of I-80. Small periodic increases in elk populations would occur as a result of approved augmentation and/or reestablishment efforts as outlined in the management determinations for this alternative. Therefore, it is difficult to predict at what rate elk populations south of I-80 would increase. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 1,310 elk (plus or minus 10 percent) would be achieved within about 20-21 years. To maintain the target population level under this alternative south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 35 (25 bull tags, 10 cow tags) to approximately 45 (25 bull tags, 20 cow tags).

WILDLIFE

As elk numbers increase under this alternative, the potential for competition between elk and other native wildlife species for available habitat is also expected to increase. Conflicts between elk and bighorn sheep are expected to remain the same as discussed under Alternative 3. Until elk seasonal use patterns are established, it is difficult to predict what level of conflicts might occur between elk and mule deer on crucial deer winter ranges. However, under this alternative, it is estimated use of crucial deer winter ranges by elk and the potential for direct competition for available browse

forage would be at a greater level than estimated for Alternatives 3 and 4. Conflicts would be identified through monitoring with priority for management given to mule deer.

#### Range Conditions and Available Forage

As elk populations increase and elk habitat improvements are developed, elk densities are expected to be less dispersed with seasonal use areas well established. A reduction in range condition due to elk use could occur in areas of concentrated elk use, particularly ridgelines and southern aspects where concentrated winter and spring elk use would occur. However, impacts to range conditions are expected to remain similar to those identified under Alternative 4. Monitoring of rangeland conditions within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

#### Existing Grazing Uses

Elk populations under this alternative would be above that range identified as supportable by forage currently unavailable to existing grazing uses (livestock and wild horses). The elk population range supportable by forage currently unavailable to existing grazing uses is presented in Appendix D. However, considering the indeterminate factors and the conservative assumptions utilized in this data analysis, it is difficult to predict at what elk population level conflicts with existing uses would occur. However, as elk numbers increase under this alternative, making increased use of available habitat and habitat improvements achieve less effectiveness in mitigating conflicts, competition between elk and existing grazing uses is expected to increase. Conflicts are expected to be greater than for Alternative 4. Under this alternative, habitat improvements are projected to achieve moderate success in minimizing the potential for direct competition with existing grazing uses. Conflicts between elk and existing grazing uses would be quantified through monitoring and serve as the basis for recommending necessary adjustments in target population levels.

The potential for increased fence damage associated with increased elk populations would be mitigated as discussed under Alternative 3. Approximately 55 miles of fence modification would be required to mitigate conflicts under this alternative (same as for Alternative 4).

#### Water

Increased demand for available waters associated with increased elk use would be mitigated as discussed under Alternative 2. Under this population level, mitigation measures such as supplemental water development and vegetation manipulations to promote increased use of available habitat by elk would achieve moderate success.

#### Riparian Habitat

Impact to terrestrial and stream riparian habitats would be much the same as discussed under Alternative 2. Monitoring would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

### Other Resource Constraints

Management constraints on other resource management activities would be the same as described under Alternative 2.

### Private Land Resources

As elk populations increase under this alternative, it is impossible to predict accurately whether depredation of private land resources would occur and to what extent. However, as elk numbers increase, the potential for depredation of private land resources is expected to increase. Conflicts with adjacent private land resources would be mitigated as discussed under Alternative 1.

### Recreation

The impacts associated with increased recreational use would be the same as discussed in Alternative 2. The potential for impacts associated with recreational use would increase as consumptive and non-consumptive opportunities increased. The level of impacts would be the same as for Alternative 3.

### Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level visual impacts could occur as a result of construction of 45 supplemental water developments within elk habitats and 5,000 acres of vegetation manipulation projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

### Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. At this population level, the number of tags issued for elk hunting would rise to approximately 155 in approximately 17 years. Hunter days would reach 1,085; and non-consumptive wildlife-associated recreation days are estimated to number 1,378. Total expenditures associated with hunting and recreation activity are estimated at $111,200, producing direct income in the local area of $32,900, providing an estimated 1.9 FTE jobs (3,800 hours).

The worth of the recreation experience, for hunters and recreationists combined, is estimated at a willingness-to-pay value of $145,300. Revenues to the state for application fees are estimated at $24,100; assuming that only 5 percent of the elk tags would be issued to non-residents, and not projecting for any bid-tag sales.

Competition with livestock grazing for AUMs, potential depredation of private land resources, and the potential economic impact on individual ranch operations would be based on the level of conflict experienced. As populations levels increase, increased levels of conflict are expected with some adverse impact on individual ranch operations likely to occur. Most all economic losses would be compensable through existing legislation allowing the NDOW to respond to and/or compensate for depredation damage by elk. Monitoring would identify conflicts in management of public land

resources and allow for mitigation through recommendations to the NDOW in reductions of elk herd sizes as necessary.

**Cumulative Impacts:**

All resource values have been evaluated for cumulative impacts. It has been determined that cumulative impacts would be negligible as a result of alternatives presented in this environmental assessment.

**Monitoring Needs:**

The monitoring described for each alternative is sufficient for this action.

## V. CONSULTATION AND COORDINATION

### A. Persons, Groups, and Agencies Consulted:

The determination to process this amendment was made in April, 1993. A Notice of Intent to prepare an environmental assessment (EA) level amendment to the Wells RMP was published in the Federal Register on May 14, 1993. This notice also included a 45-day scoping period during which the public was requested to assist the BLM in identifying planning issues, planning criteria, and identifying alternatives they wish to be analyzed in the amendment. A letter to all interest groups, individuals, and agencies was sent on May 13, 1993. Two public scoping meetings were also held (June 1, 1993 in Twin Falls, Idaho and June 2, 1993 in Wells, NV) to receive public comments on the scoping documents. A news release was prepared and sent to all newspapers in northern Nevada. In response, thirty five comment letters were received and oral comments were received from twenty two individuals. Written and oral comments expressed a wide range of concerns and views which are summarized under the heading "Public Attitudes" in Chapter III of this EA.

To facilitate a more efficient preparation of the plan amendment, a Task Force Group was formulated to assist the area manager in:

- formulating planning issues,
- identifying the scope of environmental analysis,
- developing a scoping document,
- reviewing public comments,
- identifying management alternatives to be considered,
- providing baseline information, and
- selecting a preferred alternative.

The Task Force Group is comprised of representatives from resource management agencies, land owners, special interest groups, and county government. The following is a list of Task Force Group members:

| | |
|---|---|
| Robert Wright | Rancher/Land Owner |
| Steve Boies | Rancher/Land Owner |
| Don Campbell | Rancher/Land Owner |
| John Dits | Elko Chapter, Rocky Mountain Elk Foundation |
| Gilbert Hernandez | Elko County Advisory Board to Manage Wildlife |
| Carl Nellis | Idaho Dept. of Fish & Game, Region 4 |
| Larry Barngrover | Nevada Division of Wildlife, Region 2 |
| Boyd Spratling | Nevada Wildlife Commission |
| Jack Rensel | Utah Dept. of Wildlife, Northern Region |
| Waive Stager | U.S. Forest Service, Jarbidge Ranger District |
| Don Ohman | U.S. Forest Service, Twin Falls Ranger District |
| Gary Carson | BLM, Boise District, Jarbidge Resource Area |
| Tom Dyer | BLM, Burley District, Snake River Resource Area |
| Leon Berggren | BLM, Salt Lake District, Bear River Resource Area |
| Bill Baker | BLM, Elko District, Wells Resource Area |
| Von Sorensen | Elko County Commissioners, Federal Land Use Advisory Commission |
| Candice Wines | Elko County Commissioners, Federal Land Use Advisory Commission |

B. List of Preparers:

Ray Lister - BLM, Elko District Range Specialist
Kent Undlin - BLM, Wells Resource Area Wildlife Biologist
Paul Myers - BLM, Nevada State Office Economist

C. List of Reviewers:

Elk Plan Amendment Task Force Group
David Vandenberg - BLM, Elko District Planning and Environmental Coordinator
Roy Price - BLM, Elko District Wildlife Biologist
Gary Back - BLM, Elko Resource Area Wildlife Biologist
Ken Wilkinson - BLM, Elko Resource Area Wildlife Biologist
Carol Evans - BLM, Elko Resource Area Fisheries Biologist
Neil Talbot - BLM, Nevada State Office Environmental Planner
Dave Pulliam - BLM, Nevada State Office Wildlife Program Leader
Leticia Gallegos - BLM, Wells Resource Area Range Conservationist

# APPENDICES

# Appendix A

## Adjudication, land use planning, monitoring and their relation to existing livestock use within the Wells Resource Area.

Livestock grazing privileges were originally awarded in accordance with the Taylor Grazing Act of June 28, 1934. The establishment of grazing allotments and determining the number of livestock and wildlife that can be supported by the range resource for a particular allotment, unit, or area was first done through the Bureau's adjudication program in the 1960's. The Bureau's adjudication process involved: 1) the determination of base property qualifications by means of dependent property surveys; 2) the rating of the grazing capacity of the Federal range by means of forage inventories; 3) the rating of the production potential of the Federal range; and 4) the equitable apportionment of the Federal range among the competing applicants for use of the same range area. The range adjudication process and the equitable apportionment of the available forage among the competing applicants established the grazing preference for each qualified livestock operator as well as the area, season, and kind of livestock use.

Section 202 of the Federal Land Policy and Management Act of 1976 directed the BLM to complete Land Use Planning. Beginning in the late 1970's and continuing in the late 1980's the BLM in Nevada was in an intensive land use planning phase. The emphasis which began this effort was the court settlement (NRDC v. Morton), agreed to between the National Resource Defence Council, the BLM and Federal Court wherein, the BLM was to prepare 212 Environmental Impact Statements (EISs) to analyze the impacts of grazing domestic livestock on public lands. Early land use planning efforts contained, in part, the proposed action for the allocation of forage to livestock, wildlife, wild horses and burros which was analyzed in the EIS's. These proposed actions used "one point in time inventories" as a data base to determine the overall carrying capacity of the range and proposed various allocations of the capacity between varying uses. This policy became controversial and centered around the validity of using "one point in time inventories" as the main criteria for allocations. As a result of this controversy in 1982 the BLM Director issued a new policy (Instruction Memorandum 81-548) that required adequate monitoring data to be required in addition to data from "one point in time inventories" when changes in livestock grazing preferences were implemented.

As a result, Nevada's Resource Management Plans made the following types of decisions:

1. Livestock Grazing:
   - a. Identified objectives for vegetetion goels.
   - b. Determined where livestock would end would not be allowed.
   - c. Identified the degree of renge improvements.
   - d. Identified kind of livestock to be permitted by erae.
   - e. Identified goels for euthorized levels of livestock use.
   - f. Identified "initiel levels" of euthorized livestock grezing.
   - g. Identified that "monitoring" would be used to adjust livestock grezing if it wes determined thet the existing euthorizations were not meeting the LUP objectives.

2. Wild Horse end Burros:
   - a. Identified Herd Menegement Arees.
   - b. Identified "initiel levels" of Wild Horse end Burros.
   - c. Identified thet "monitoring" would be used to edjust Wild Horse end Burro levels.

3. Wildlife:
   - a. Identified hebitet objectives by kind end erae or wildlife.
   - b. Identified "reesoneble numbers" of wildlife by kind end erae.
   - c. Identified equetic hebitet objectives.
   - d. Identified thet "monitoring" would be used es the besis for recommending edjustments in wildlife populetion levels to the Nevede Department of Wildlife.

# Appendix B
## Management Determination and Impact Analysis Summary

| Management Determinations | | | | | |
|---|---|---|---|---|---|
| Alternative | Alternative 1 (No Action) | Alternative 2 (Limited Growth) | Alternative 3 (Preferred Alternative) | Alternative 4 (Moderate Density) | Alternative 5 (High Density) |
| Target Population | 400 | 900-1,100 | 1,980-2,420 | 3,150-3,850 | 4,320-5,280 |
| Mgt. Areas | 2 | 6 | 6 | 6 | 6 |
| Elk Habitat Improvements | none | 15 waters<br>30 mi fence | 20 waters<br>45 mi fence<br>2,000 ac. burn | 35 waters<br>55 mi fence<br>3,500 ac. burn | 45 waters<br>55 mi fence<br>5,000 ac. burn |

| Impact Analysis for Each Alternative (Impact Rating/Mitigation Rating) | | | | | |
|---|---|---|---|---|---|
| Existing Big Game Habitats | 0/1A | 1/1A | 2/1A | 3/1A | 3/1A |
| Vegetative Resources/ Range Conditions | 0/1A | 0/1A | 2/1A | 2/1A | 2/1A |
| Existing Grazing Uses | 0/1A | 1/1A,1C | 2/1A,1C | 3/1A,2 | 3/1A,3 |
| Fences | 1/1C | 1/1C | 3/1C | 3/1C | 3/1C |
| Demand on Available Waters | 1/0 | 1/1C | 1/1C | 3/2 | 3/3 |
| Riparian Habitats | 1/1A | 1/1A | 1/1A | 1/1A | 1/1A |
| Constraints on other Resource Activities | 1/0 | 3/0 | 3/0 | 3/0 | 3/0 |
| Conflicts with Private Land Resources | 1/1B | 1/1B | 3/1B | 3/1B | 3/1B |
| Recreation | 1/0 | 1/0 | 2/0 | 2/0 | 2/0 |
| Visual | 1/1A | 1/1A | 2/1A | 2/1A | 2/1A |
| Socio/Economics | +/0 | +/0 | +/0 | +/0 | +/0 |

Impact Rating:

| | |
|---|---|
| + | Positive benefits associated with increased consumptive and non-consumptive use. |
| 0 | No impacts. |
| 1 | Minimal impacts |
| 2 | Potential increased impacts expected; low level. |
| 3 | Conflicts are expected. |

Mitigation Analysis:

| | |
|---|---|
| 0 | No mitigation. |
| 1A | Mitigation via rangeland monitoring/allotment evaluation to reduce numbers; mitigation via site specific EA. |
| 1B | Mitigation - NDOW responsibility (depredation compensation). |
| 1C | Mitigation via habitat improvements is effective. |
| 2 | Mitigation begins to lose effectiveness. |
| 3 | Mitigation results in moderate success. |

# Appendix C

## Estimated Elk Population Growth Model

Introduction

In order to formulate an estimate of how fast elk populations in the Wells Resource Area (WRA) could be expected to increase, growth curves and tables were developed for populations north of I-80 (Figure C-1, Table C-1) and south of I-80 (Figure C-2, Table C-2) based on maximum response to a new environment. Existing elk populations within the WRA north of I-80 are estimated at 390-575. Approximately 150 elk also inhabit the Utah side of Pilot Mountain. Because the Pilot Mountain elk population is cooperatively managed by Utah and Nevada under similar harvest strategies, a base population of 775 (current WRA elk population estimate north of I-80 plus the current Pilot Mountain population for Utah) was used to estimate population growth north of I-80. Because established populations do not exist south of I-80 (only occasional sightings of elk have been recorded), a viable base population of 150 was used as a starting point from which to estimate population growth south of I-80.

Assumptions

In developing these population growth estimates, the assumption is made that mortalities are light and based on a limited hunting/harvest regime. Also, limited predator (animal and human) mortalities were used. Assumptions inherent to this population model are based on 25 years data on the Cache Forest in Utah. However, the assumptions utilized were slightly liberalized based on professional judgement as Nevada conditions dictate. The following assumptions were used for this analysis:

.90 male young survival (post-pre)[1]
.90 female young survival (post-pre)
.92 female adult survival (post-pre)
.95 yearling male survival (post-pre)
.95 male adult survival (post-pre)
.43 production (summer ratio)

[1] "post-pre" = from post hunting season to pre-hunting season the following year.

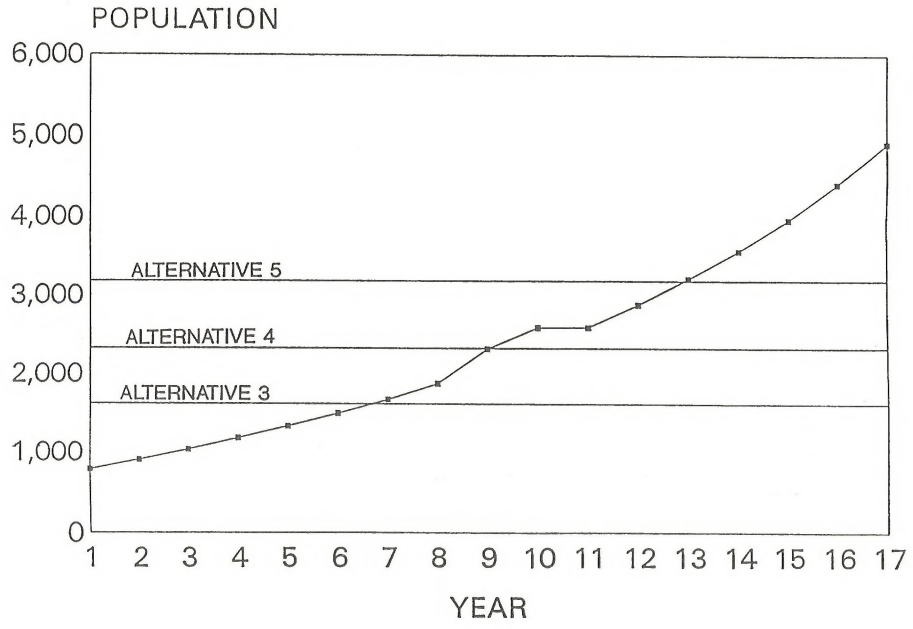
As population levels increase, it would be expected that the growth rate for the herd would decline or level off. However, for this analysis a constant growth rate has been depicted.

Harvest Strategies

When an elk population approaches an objective level, the harvest level needs to be adjusted upwards. Starting several years prior (4 or 5 years) to achievement of the object, the harvest levels (especially for females) need to be increased. Depending on how successful this strategy is at scaling down the growth curve, a harvest of approximately 25% of both the female and male recruitment (increment) would need to be achieved. There are many variables that influence the harvest level and tag quotas and the actual tag quota and harvest would vary from year to year and area to area. These variables include but are not limited to hunter success, number of hunters (congestion), hunters attitude, availability of animals, bull/cow ratios, weather, vegetation type, tree cover, topography, and the class of hunter that draws the tag.

Figure C-1

Estimated Elk Population Growth Curve - North I-80



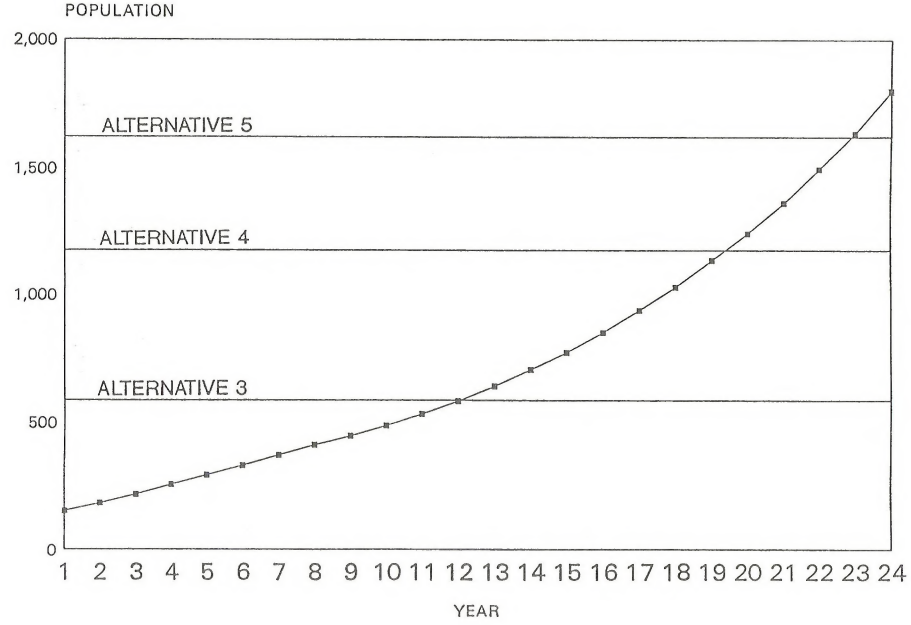
## Table C-1

**Estimated Elk Population Growth Table and Tags Issued North of I-80**

| YEAR | POPULATION | BULL TAGS | COW TAGS | TOTAL TAGS |
|---|---|---|---|---|
| 1 | 775 | 70 | 10 | 80 |
| 7 | 899 | 80 | 10 | 35 |
| 9 | 1031 | 80 | 10 | 35 |
| 1 | 1179 | 80 | 10 | 50 |
| 5 | 1330 | 40 | 15 | 55 |
| 5 | 1494 | 50 | 15 | 55 |
| 7 | 1670 | 50 | 15 | 50 |
| 9 | 1870 | 55 | 20 | 75 |
| 9 | 2318 | 70 | 20 | 50 |
| 10 | 2583 | 70 | 20 | 50 |
| 11 | 2586 | 70 | 20 | 90 |
| 12 | 2875 | 75 | 25 | 100 |
| 10 | 3202 | 80 | 25 | 100 |
| 14 | 3562 | 90 | 25 | 115 |
| 15 | 3960 | 100 | 30 | 130 |
| 16 | 4403 | 110 | 30 | 140 |
| 17 | 4897 | 115 | 35 | 150 |
| TOTAL | | 1080 | 340 | 1420 |

**Figure C-2**

**Estimated Elk Population Growth Curve - South of I-80**



## Table C-2

**Estimated Elk Population Growth Table and Tags Issued South of I-80**

| YEAR | POPULATION | BULL TAGS | COW TAGS | TOTAL TAGS |
|---|---|---|---|---|
| 1 | 150 | 0 | 5 | 0 |
| 2 | 181 | 0 | 0 | 0 |
| 3 | 216 | 0 | 0 | 0 |
| 4 | 254 | 0 | 0 | 0 |
| 5 | 291 | 5 | 0 | 5 |
| 5 | 370 | 5 | 5 | 10 |
| 2 | 370 | 0 | 5 | 10 |
| 8 | 410 | 15 | 5 | 15 |
| 5 | 445 | 15 | 10 | 25 |
| 13 | 486 | 15 | 10 | 25 |
| 11 | 531 | 15 | 10 | 25 |
| 13 | 582 | 15 | 10 | 25 |
| 13 | 639 | 15 | 10 | 25 |
| 14 | 703 | 15 | 10 | 25 |
| 19 | 770 | 20 | 10 | 30 |
| 19 | 847 | 20 | 10 | 30 |
| 13 | 934 | 20 | 10 | 30 |
| 19 | 1027 | 25 | 10 | 35 |
| 19 | 1133 | 25 | 10 | 35 |
| 20 | 1240 | 35 | 15 | 50 |
| 21 | 1361 | 35 | 15 | 50 |
| 22 | 1495 | 40 | 15 | 55 |
| 23 | 1637 | 50 | 15 | 65 |
| 24 | 1802 | 50 | 15 | 65 |
| TOTAL | | 435 | 200 | 635 |

# Appendix D

## Elk Available Forage Analysis

Introduction

The planning criteria for this proposed RMP amendment states that monitoring will continue to be the basis for making adjustments in grazing use; e.g. this proposed plan amendment will not serve to allocate or adjudicate forage for specific grazing uses. The planning criteria established for this proposed plan amendment also states ...existing studies, the most current available inventories, current publications, and professional judgement will be used to determine potential impacts (of proposed alternatives) and to make sound management decisions.

Each grazing allotment within the resource area has been classified into a selective management category based on management needs, potential for improvement, and Bureau funding/manpower constraints. Selective management classifies allotments into three categories: "M" (Maintain), "I" (Improve), or "C" (Custodial). Forage utilization data is collected annually for all "I" and "M" category and most "C" category grazing allotments within the resource area. Utilization data is evaluated to determine if grazing management (livestock, wild horses, and wildlife) is meeting long term multiple use objectives and whether adjustments in the numbers of grazing animals are necessary. Livestock grazing use patterns are also mapped to further evaluate livestock utilization and distribution. Use pattern mapping data stratifies grazing allotments or pastures into utilization levels ranging from zero use to severe use. Analysis of this information, with qualifications and limitations, allows for determination of a range of potential elk numbers that could be supported within moderate to high potential habitats in relation to existing grazing uses by livestock and wild horses.

A summary of elk population ranges which could be supported within each proposed management area based on analysis of livestock and wild horse use pattern mapping data is outlined in Table D-1. This analysis does not represent an allocation or adjudication of forage. This analysis only utilizes currently available livestock utilization and distribution data to identify a range of elk numbers that could be supported by AUMs presently unavailable to livestock. This relationship between elk habitat potentials and existing livestock use is only used to assist in determining potential impacts associated with alternative elk target population levels presented in this proposed plan amendment. As stated in the planning criteria for this proposed plan amendment, monitoring data will be used as the basis for future adjustments in target elk population levels. Any conclusions or determinations of potential impacts of elk use based on this data summary must be tempered with the following:

- This analysis shows a range of elk numbers which could be supported based only on forage or habitat areas currently unavailable by livestock and/or wild horses. This makes an assumption of complete dietary overlap between elk and cattle which does not exist. Dietary overlap is a seasonal factor and would be less during fall and winter months. Therefore, elk could utilize winter range, for example, outside those areas shown as unavailable for livestock without conflict.

- This analysis only considers moderate to high potential elk habitat within each proposed management area. A much larger amount of low to moderate potential elk habitat exists within each proposed management area which are not included in this analysis.

- The public acres within the moderate to high potential elk habitat areas identified as unavailable to livestock are based on current livestock use pattern mapping data on file at the Elko District Office of the BLM. Livestock distributions could increase, reducing those acres and AUMs

identified as unavailable to livestock, with development of rangeland improvement projects; particularly water developments.

- This analysis makes the assumption that all acres unavailable to livestock are suitable for elk. Some areas unsuitable for livestock due to lack of water may also be unsuitable for elk.

In addition to the above considerations, it is also important to emphasize the following conservative assumptions utilized to determine (for analysis purposes) the range of elk numbers which could be supported within each proposed management area:

- Only public acres within moderate to high potential habitat areas were included. For the proposed Pilot Management Area, the analysis results show supportable elk numbers about fifty percent of current population management levels. This would indicate that elk populations in this management area are being supported by private lands without conflict. This situation could exist elsewhere in the resource area.

- Only those public acres stratified as zero use and ten percent of those acres stratified as slight use by livestock were included. The average forage use by livestock in the slight use zone is ten percent. Only including ten percent of these acres for use by elk allows for a very conservative potential elk density estimate, allowing for reduced conflict potentials with existing grazing uses.

- The AUMs calculated as unavailable to livestock are based on 11.4 acres/AUM. This is the overall average based on the total public land acres within the WRA and current active preference. Forage production within those areas unavailable to livestock would most likely be greater due to higher elevations, greater precipitation, and later seral stage conditions.

- The Wells RMP utilized a conservative conversion factor of 1.25 elk/AUM. Conversion factors within similar Great Basin habitats range from 1.25 to 3.1 elk/AUM.

## Table D-1
## Elk Available Forage Analysis

| Management Area | Alternative Elk Population Levels | Acres of Mod-High Habitat | Total Mod-High Habitat % Public Land | Public Acres Unavailable to Livestock[1] | AUMs Unavailable to Livestock[2] | AUMs Wild Horse Use in Mod-High Habitat[3] | % Wild Horse Use Within Areas Unavailable to Livestock[4] | AUMs Wild Horse Use[5] | AUMs Available for Elk[6] | Elk Numbers Supportable by AUMs Unavailable to Livestock[7] |
|---|---|---|---|---|---|---|---|---|---|---|
| Jarbidge | Alt. 2 110<br>Alt. 3 220<br>Alt. 4 370<br>Alt. 5 515 | 95,990 | 97% | 13,909 | 1,220 | 0 | 0 | 0 | 1,220 | 127-315 |
| Snake Range | Alt. 2 40<br>Alt. 3 100<br>Alt. 4 170<br>Alt. 5 240 | 90,084 | 61% | 6,675 | 586 | 0 | 0 | 0 | 586 | 61-151 |
| Goose Creek | Alt. 2 400<br>Alt. 3 1070<br>Alt. 4 1780<br>Alt. 5 2485 | 612,285 | 61% | 41,459 | 3,637 | 0 | 0 | 0 | 3,637 | 379-940 |
| Pilot | Alt. 2 250<br>Alt. 3 250<br>Alt. 4 250<br>Alt. 5 250 | 32,654 | 49% | 13,909 | 3,037 | 0 | 0 | 0 | 3,037 | 105-261[8] |
| Spruce/Pequops | Alt. 2 0<br>Alt. 3 340<br>Alt. 4 560<br>Alt. 5 790 | 147,959 | 99% | 41,459 | 3,637 | 900 | 80% | 787 | 2,850 | 297-736 |
| Cherry Creeks | Alt. 2 0<br>Alt. 3 220<br>Alt. 4 370<br>Alt. 5 520 | 95,990 | 97% | 26,809 | 2,352 | 900 | 95% | 855 | 1,497 | 156-386 |
| TOTAL RANGE | | | | | | | | | | 1125-2789 |

1 Based on livestock use pattern mapping data depicting areas of "no use" and "slight use" by livestock within those areas identified as having moderate-high elk habitat potential. Total public acres unavailable to livestock is based on 100% of those acres mapped as "no use" and 10% of those acres mapped as "slight use" (1-20% utilization).

2 Based on WRA average of 11.4 acres/AUM.

3 Based on wild horse herd management area initial herd sizes identified in the Wells RMP Approved Wild Horse Amendment and Decision Record, signed August 2, 1993.

4 Based on wild horse census information and professional judgement to determine wild horse use within "no use" and "slight use" livestock use areas within moderate to high elk habitat areas.

5 Total wild horse use multiplied by percent use within "no use" and "slight use" livestock use areas.

6 AUMs unavailable to livestock less AUMs wild horse use.

7 Based on a conversion factor range of 1.25 elk/AUM - 3.1 elk/AUM.

8 Current elk population management in the Pilot Mountain Management Area maintains a population of 250 elk in Nevada. Future population management objectives remain the same. This data analysis identifies fewer supportable elk numbers than currently managed. Because the percent public land is only 49%, this would indicate elk numbers being supported by private land habitat without conflict.

## APPENDIX E

## NEVADA DIVISION OF WILDLIFE
## ELK MANAGEMENT SUMMARY

### INTRODUCTION

The management determinations for Alternatives 2 through 5 of the proposed elk plan amendment stipulate that elk population levels will be managed through population management strategies developed and implemented by the Nevada Division of Wildlife (NDOW). The purpose of this appendix is to provide a summary of current elk management strategies implemented by the Nevada Division of Wildlife (NDOW) together with additional background information.

### HARVEST MANAGEMENT

Elk management in Nevada is authorized by provisions set forth in Nevada Revised Statutes (NRS), Nevada Administrative Code, the Nevada State Board of Wildlife Commission Policies, and the Nevada Division of Wildlife's Policies and Procedures. Final management actions, i.e. harvest recommendations and elk transplants, are subject to public review through local County Boards to Manage Wildlife and State Board of Wildlife Commission Public Meetings. Transplants on public lands are further analyzed and reviewed by the public in National Environmental Policy Act (NEPA) documents such as EA's prepared by land management agencies for implementation of proposed habitat management plans.

The Division of Wildlife conducts annual helicopter elk surveys to assess age and sex ratios of the population in order to predict population growth and provide harvest management recommendations. Monitoring of the elk population is aided by use of ear tagging transplanted animals, use of radio telemetry collars, and documentation of elk sightings. A hunting season is initiated as soon as a population becomes established and surveys indicate that the age structure of the male segment of the population is adequate to support a quality elk hunting experience without detriment to the biological health of the herd. Female harvest is normally initiated in response to depredation problems or when federal agency vegetation monitoring supports a need to stabilize or reduce elk numbers. Therefore, elk hunting is utilized to maintain elk populations within the carrying capacity of the vegetative resources.

Depredation legislation, policy and procedures guide elk management where pioneering or established elk populations depredate on private land resources. If vegetative monitoring by public land management agencies supports a conclusion that elk populations are consuming vegetative resources at a level inconsistent with land use planning objectives, one or more of the following actions are taken:

1. Establish an elk hunting season to stabilize the elk population.

2. Establish an elk hunting season to reduce the elk population to an acceptable level.

3. Establish an elk hunting season to eliminate the elk population.

Any and all actions to control elk populations are subject to the normal Division of Wildlife public season setting processes.

## DEPREDATION

Elk depredation problems are addressed through provisions outlined in the Division of Wildlife's Program and Procedure regarding Elk Depredation.

In 1989, the Nevada Legislature, with support from the Division of Wildlife, passed elk damage payment legislation. This legislation has enabled the Division of Wildlife to effectively respond to elk depredation complaints through establishment of a fund collected from sportsmen in the application process for elk tags. Sportsmen agreed to an additional $5 fee for the elk tag application process which generates more than $25,000 annually for mitigating elk depredation problems. A Program and Procedure has been established by the Division of Wildlife to "adequately respond to and/or compensate for depredation damage caused by elk". Since establishment of the fund, all active elk depredation have been addressed through payment and fencing for both stored and standing crops throughout the state.

In addition to the Program and Procedure governing elk damage and damage payments described above, NRS 503.595 mandates that the Division of Wildlife can implement more drastic measures to alleviate or solve a big game depredation problem, including elk, through a removal program. In general, if pioneering elk, recently transplanted elk, or established individuals become involved in a depredation situation, the Division investigates and implements a course of action including hazing, fencing, damage payments, and removal/dispersal of offending animals by trapping or hunting/shooting designed to solve or eliminate that problem. If possible, the Division attempts to remove offending animals through an emergency depredation hunt with public participation. If conditions do not allow for the safe and/or effective removal of offending animals with a public hunt, Division personnel may remove them by trapping and transplanting or shooting. Elk have been removed in the past by Division personnel to alleviate depredation problems. Any and all actions taken against depredating elk are coordinated with the private land owner and sufficient actions necessary to solve the problem are taken.

36694

ER'S CARD

| | OFFICE | DATE RETURNED |
|---|---|---|
| | | |
| | | |
| | | |

(Continued on reverse)

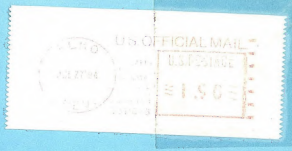
BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225-0047

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

—

Wells Resource Area
3900 E. Idaho Street
P.O. Box 831
Elko, NV 89803

—

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE

Forwarding and Address
Correction Requested